	Variant I	Variant II
m) Step of quadratic lattice	22 cm	22 cm

The results obtained are given only in form of curves. It was found that for reactors of the types mentioned the most favorable neutron temperature is that between 900 and 1 000°K.
The dependence of the run of the reactor and of the conversion ratio on the temperature of the neutron gas was determined also for two other types of reactors. The results are shown in form of graphs. The following reactors are concerned:

1.) Homogeneous Sodium-Graphite Reactor:
   a) Heat output: 250 MW
   b) Weight of the total quantity of uranium: 19 t
   c) Uranium concentration: 0,002
   d) Initial enrichment of uranium: 6%
   e) Material of tubes for coolant: stainless steel of 0,3 mm thickness

f) Diameter of core: 8 m
g) Height of core: 6 m

2.) Heterogeneous Uranium-Graphite Reactor:
a) Heat output: 500 MW
b) Total weight of uranium: 132 t
c) Initial enrichment of uranium: 1%
d) Type of fuel elements: cylindrical slugs of 3 cm diameter
e) Canning material: stainless steel of 0,3 mm thickness
f) Coolant: CO_2
g) Diameter of core: 8 m
h) Height of core: 8 m
i) Step of lattice: 20 cm

There are 14 figures, 1 table, and 2 references, 2 of which are Soviet.

SUBMITTED: May 9, 1958

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SOV/89-5-3-2/15

AUTHORS: Dollezhal', N. A., Krasin, A. K., Aleshchenkov, P. I., Grigor'yants, A. N., Florinskiy, B. V., Minashin, M. Ye., Yemel'yanov, I. Ya., Kugushev, N. M., Sharapov, V. N., Mityayev, Yu. I., Galanin, A. N.

TITLE: A Uranium-Graphite Reactor With Superheating of Steam of High Pressure. I (Uran-grafitovyy reaktor s peregrevom para vysokogo davleniya)

PERIODICAL: Atomnaya energiya, 1958, Vol. 5, Nr 3, pp. 223-233 (USSR)

ABSTRACT: The 400 MW plant is equipped with 4 uranium-graphite reactors. A reactor and a steam turbine of 100 MW together form a closed block. A number of investigations was carried out for the purpose of checking the individual parts of this block. The following results were obtained:
1) With a thermal flux of $\sim 1.10^6$ kcal/m^2h the steam content by weight at the outlet attains a value of up to 20%.

2) Several hundred hours' uninterrupted operation of a channel in the boiling stage did not disrupt the channel.

Card 1/3 3) The activity of the steam condenser was found to be 10 times

lower than that of the water in the separator.
4) If the content of steam in the steam-water mixture attains 15 - 20%, a pulsation of the consumption of the mixture occurs. From the moment at which the steam mixture passes from the separator into the turbine, pulsation stops and does not occur again in the course of a further increase of the steam phase.
5) During the initial development of the waterlevel in the separator the temperature in the fuel channels fluctuates considerably. As soon as stable conditions are established, these fluctuations cease.
6) The steam-water mixture was not found to be delayed in any of the channels.
From a plurality of varieties the best scheme for the production of superheated steam was selected (see figures). The turbogenerator BK-100 operates with a steam of 90 atm and a temperature of 480 - 535° C.
The following are the physical characteristics of the reactor:

Thermal output	285 MW
Electrical output	100 MW
Average cycle	730 days
Uranium charge	90 tons

A Uranium-Graphite Reactor With Superheating of Steam of High Pressure. I

Uranium enrichment at the beginning of a cycle	1,3 %
Uranium enrichment at the end of a cycle	1,03 %
Breeding ratio at the beginning of a cycle	65 %
Breeding ratio at the end of a cycle	55 %
Amount of U-235 burned-up during a cycle	243 kg
Amount of Pu-239 burned-up during a cycle	55 kg
Amount of Pu-239 and Pu-241 at the end of a cycle	132 kg
Excess reactivity for temperature effect	0,040
Excess reactivity for poisoning	0,015
Excess reactivity for the fuel burn-up and long-lived fission fragments	0,025
Total excess reactivity	0,080

There are 8 figures.

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SOV/89-5-3-3/15

AUTHORS: Dollezhal', N. A., Krasin, A. K., Aleshchenkov, P. I., Grigoryants, A. N., Florinskiy, B. V., Minashin, M. Ye., Yemel'yanov, I. Ya., Kugushev, N. M., Sharapov, V. N., Mityayev, Yu. I., Galanin, A. N.

TITLE: A Uranium-Graphite Reactor With Superheating of Steam of High Pressure. II (Uran-grafitovyy reaktor s peregrevom para vysokogo davleniya) (Continued from abstract 2/15)

PERIODICAL: Atomnaya energiya, 1958, Vol. 5, Nr 3, pp. 233-244 (USSR)

ABSTRACT: The graphite mantle of the reactor (diameter 9,6 m, height 9 m) is built into a cylindrical steel container. The container is filled with nitrogen in order to prevent burn-up of the graphite. The active zone of the reactor has a diameter of 7,2 m and a height of 6 m. As a lateral reflector graphite of 0,8 m thickness is used. Graphite of 1 m thickness is used as upper reflector, and above it a layer of cast iron having a thickness of 0,5 m is fitted. Together, these components serve as the main portion of the / upper biological / shield. Graphite of 0,6 m thickness is used as lower reflector. In the graphite structure openings for 1134 channels are provided. 730 of them are provided with fuel ele-

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A Uranium-Graphite Reactor With Superheating of Steam of High Pressure.II

ments which are cooled by means of boiling water and contain up to 33% percentage by weight of steam at the output. 266 channels are cooled by steam which is heated up to the corresponding turbine temperature. Six channels contain the automatic regulating rods, 78 channels are provided for the compensation rods, and 16 for the shim rods. The ionization chambers and counting tubes are located in 36 channels. The fuel channels, the regulating- and shim rods as well as the arrangement of the channels in the active zone are shown in form of drawings. The circuit diagram for the reactor turbine shows the connection between the reactor, the two-stage turbine, two condensers, a system of additional heating of the feed-water, a de-aerator (6 atm), 2 preheaters (for high pressure), condensation- and feed pumps. The water is conveyed into the boiling channels by way of two centrifugal pumps. When entering these channels the water has a temperature of 300° C and a pressure of 155 atm. The mixture of steam and water formed in these channels reaches the separator, where steam and water are separated. From here the water is conveyed to the preheater of the steam generator (which consists of 2 parts), where it is cooled from the saturation temperature of 340° C (pressure in the sep-

A Uranium-Graphite Reactor With Superheating of Steam of High Pressure.II

...ator 150 atm) down to 300° C. Heat is transferred to the ...-water of the secondary circuit. The water of this circuit is in the first section of the preheater brought from a temperature of 215° C to saturation temperature, which corresponds to a pressure of 110 atm. In the second part it is evaporized until the quantity of steam corresponding to weight attains 20%. The secondary steam produced in the steam generator is led in to the steam channels of the reactor, where it is heated up to a temperature of 510° C. The steam reaches the turbine with a pressure of 90 atm and a temperature of 500° C. The main building of the electric power plant consists of 4 parts arranged one behind the other, the machine hall, the operation rooms, the de-aerator, and the reactor hall. For an average cycle of 730 days it is shown by calculation that the cost of atomic kWh are equal to the kWh obtained by means of the usual fuels. Fuel costs amount to from 30 to 40% of the total costs. If the fuel channels and fuel elements operate in a stable manner, it can be proved that by a slight increase of the degree of enrichment in uranium the average cycle can be increased, which leads to a reduction of costs. There are 9 figures and 1 table.

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8(6);21(0) PHASE I BOOK EXPLOITATION SOV/3143

Krasin, Andrey Kapitonovich, Laureate of the Lenin Prize, Doctor of Physical and Mathematical Sciences, Professor

Atomnyye elektrostantsii; razvitiye yadernoy energetiki za pyat' let. (Atomic Electric Power Stations; Development of Nuclear Power Engineering for the Last Five Years) Moscow, Izd-vo "Znaniye," 1959. 22 p. (Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya IX, 1959, no. 25) 37,000 copies printed.

Sponsoring Agency: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy.

Ed.: I. B. Faynboym; Tech. Ed.: L. Ye. Atroshchenko.

PURPOSE: The booklet is intended for the general reader.

COVERAGE: The author discusses the achievements attained in atomic power engineering in the past five years, i.e., since the establishment in the town of Obninsk, USSR, of the first nuclear electric power plant which started operating on

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June 27, 1954. He describes the plant, enumerates the initial problems and discusses some basic types of nuclear power stations in the USSR, USA and Great Britain. He presents tables in which several types of existing nuclear reactors are compared and their parameters enumerated. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

KRASIN, A. K.

21(3,4); 17(10) PHASE I BOOK EXPLOITATION SOV/3394

Neischerpayemyy (The Inexhaustible) Moscow, Atomizdat, 1959. 149 p. Errata slip inserted. 10,000 copies printed.

Compiler: V. P. Parkhit'ko; General Ed.: A. K. Krasin, Doctor of Physical and Mathematical Sciences, Professor; Ed.: N. M. Pchelintseva; Tech. Ed.: N. A. Vlasova.

PURPOSE: This book is intended for the layman interested in the peaceful use of atomic energy.

COVERAGE: This book contains several reports by leading Soviet scientists, specializing in the peaceful uses of atomic energy, at the international seminar on "Youth and Peaceful Use of Atomic Energy," held in August, 1958, under the auspices of the Committee on Youth Organizations of the USSR.

TABLE OF CONTENTS:

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KRASIN, A.K.
P.2

21(4) PHASE I BOOK EXPLOITATION SOV/2583

International Conference on the Peaceful Uses of Atomic Engergy. 2nd, Geneva, 1958.

Doklady sovetskikh uchenykh; yadernyye reaktory i yadernaya energetika. (Reports of Soviet Scientists; Nuclear Reactors and Nuclear Power) Moscow, Atomizdat, 1959. 707 p. (Series: Its: Trudy, vol. 2) Errata slip inserted. 8,000 copies printed.

General Eds.: N.A. Dollezhal, Corresponding Member, USSR Academy of Sciences, A.K. Krasin, Doctor of Physical and Mathematical Sciences, A.I. Leypunskiy, Member, Ukrainian SSR Academy of Sciences, I.I. Novikov, Corresponding Member, USSR Academy of Sciences, and V.S. Fursov, Doctor of Physical and Mathematical Sciences; Ed.: A.F. Alyab'yev; Tech. Ed.: Ye. I. Mazel'.

PURPOSE: This book is intended for scientists and engineers engaged in reactor designing, as well as for professors and students of higher technical schools where reactor design is taught.

COVERAGE: This is the second volume of a six-volume collection on the peaceful

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use of atomic energy. The six volumes contain the reports presented by Soviet scientists at the Second International Conference on Peaceful Uses of Atomic Energy, held from September 1 to 13, 1958 in Geneva. Volume 2 consists of three parts. The first is devoted to atomic power plants under construction in the Soviet Union; the second to experimental and research reactors, the experiments carried out on them, and the work to improve them; and the third, which is predominantly theoretical, to problems of nuclear reactor physics and construction engineering. Yu. I. Koryakin is the science editor of this volume. See SOV/2081 for titles of all volumes of the set. References appear at the end of the articles.

TABLE OF CONTENTS:

PART I. NUCLEAR POWER ENGINEERING

21 (9)

AUTHORS: Dollezhal', N. A., Krasin, A. K. SOV/89-7-1-1/26

TITLE: Five Years of Nuclear Power Engineering (Pyat' let yadernoy energetiki)

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 1, pp 5 - 10 (USSR)

ABSTRACT: On June 27 of this year it was 5 years since the first Russian atomic power plant took up operation. The very flexible construction of the reactor made it possible within that time to carry out a number of large-scale experiments, which are of decisive importance for the further development of large Soviet atomic power stations. Of the series of published papers (Refs 1-6) several problems deserve special mention. Thus, it was possible to show that under certain conditions graphite is able to stand temperatures of 700 - 750°C also over long periods. On the basis of individual experiments it was possible to show it to be possible to produce overheated steam immediately in the reactor. This knowledge was utilized especially for the construction of the Ural station. The operational safety of pressure tubes was found to be far superior to that of a single vessel. By means of lengthy investigations it was found that a burn up of 10,000 Mw.d/t may easily be attained by means of the

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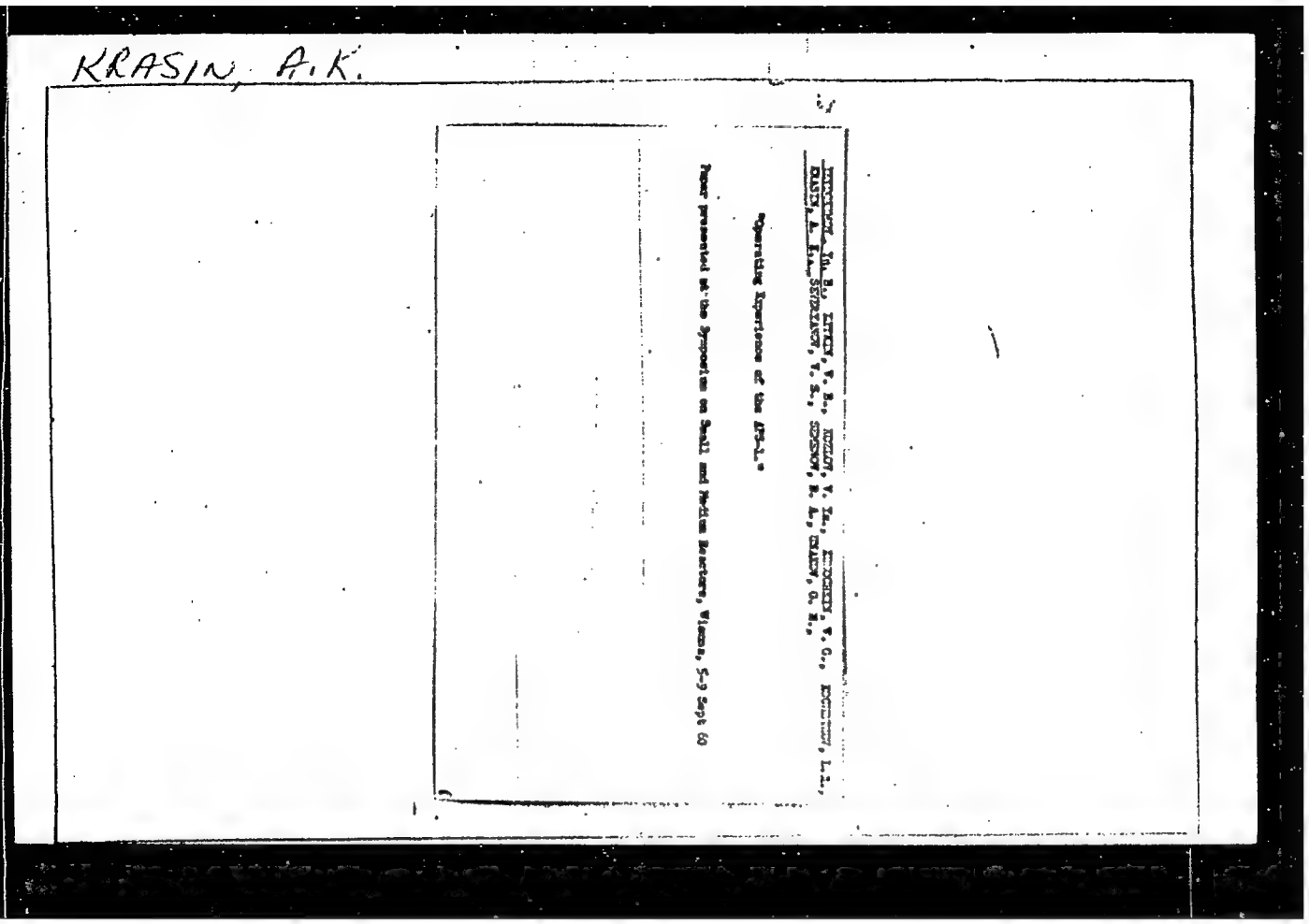
fuel elements used in the first power plant, and that with individual fuel elements burn up values of up to 30,000 Mw.d/t could be attained. By means of these experiments it was also possible to show after what times the individual reactor zones must be re-charged, and to find out whether this re-charging may be effected under load or when the reactor is shut off. Particular importance must be attached to what has been learned with respect to the safety of the reactor. It was found to be correct to build this reactor type without a special steel- or concrete container, because in the case of a major accident no particular danger can arise. Special experiments, in which individual fuel elements were destroyed, showed that the manner of construction employed in the case of the first atomic power station entailed no danger for the population living in the neighborhood or for the adjoining territory. In the course of the 5 years of continuous operation, A. N. Grigor'yants, G. N. Ushakov, L. A. Kochetkov, V. T. Lytkin and others distinguished themselves particularly. There are 2 figures and 16 references, 7 of which are Soviet.

SUBMITTED: April 27, 1959
Card 2/2

GORDEYEV, I.V.; KARDASHEV, D.A.; MALYSHEV, A.V.; KRASIN, A.K., akademik, laureat Leninskoy premii, red.; ZAVODCHIKOVA, A.I., red.; MAZEL', Ye.I., tekhn.red.

[Handbook of nuclear and physical constants used in reactor design] Spravochnik po iaderno-fizicheskim konstantam dlia raschetov reaktorov. Pod red. A.K.Krasina. Moskva, Izd-vo Gos.komiteta Soveta ministrov SSSR po ispol'zovaniiu atomnoi energii, 1960. 278 p. (MIRA 13:11)

1. AN BSSR (for Krasin).
(Nuclear reactors--Handbooks, manuals, etc.)



KRASIN, A.K.

[illegible], Yu.Ya., [illegible], V.I., [illegible], V.G., [illegible], L.L., [illegible], A.A., [illegible], V.S., [illegible], B.Ya., [illegible], O.B.

"Operating Experience of the [illegible]"

Paper presented at the Symposium on Small and Medium Reactors, Vienna, 5-9 Sept 60

BYKHOVSKIY, Izrail' Adol'fovich. Prinimali uchastiye: AL'KIMOVICH, A.V., inzh.; YEFIMOV, K.A.; KHASIN, A.K., prof., doktor tekhn. nauk, retsenzent; ZNAMEROVSKIY, B.P., kand. tekhn. nauk, retsenzent; KUDINOV, N.N., inzh., retsenzent; MISHKEVICH, G.I., red.; SHISHKOVA, L.M., tekhn. red.

[Atomic ships] Atomnye suda. Pod red. N.N.Kudinova. Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl., 1961. 310 p. (MIRA 14:9)
(Atomic ships)

S/105/61/000/001/007/007
B012/B059

AUTHORS: Bragin, S. M., Butakov, I. N., Krasin, A. K., Sokolov, A A.,
Stekol'nikov, I. S., Tareyev, B. M., Fialko, Ye. I.,
Chilikin, M. G.,and others

TITLE: On the Fiftieth Birthday of Professor A. A. Vorob'yev

PERIODICAL: Elektrichestvo, 1961, No. 1,p. 93

TEXT: The present article is a short curriculum vitae of the physicist Aleksandr Akimovich Vorob'yev. He graduated at the fiziko-mekhanicheskoye otdeleniye Tomskogo universiteta (Physical and Mechanical Department of Tomsk University) in 1931, became candidate in 1935, and took his doctor's degree in 1939. He became chairman of the kafedra "Tekhniki vysokikh napryazheniy" Tomskogo politekhnicheskogo instituta("High-tension Engineering" Department of Tomsk Polytechnic Institute), shortly afterwards dean of the energeticheskiy fakul'tet (Power Engineering Department) and later representative director of the Institute of Scientific Work. Since 1944 he has been director of the Tomsk Polytechnic Institute. In 1936, A. A. Vorob'yev established a High-tension Laboratory at the

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On the Fiftieth Birthday of
Professor A. A. Vorob'yev

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Sibirskiy fiziko-tekhnicheskiy institut (Siberian Institute of Physics and Technology). In his book "Elektricheskaya prochnost' tverdykh dielektrikov" ("Dielectric Stength of Solid Dielectrics"), which he wrote together with Ye. K. Zavadovskaya, he developed the idea of a mutual dependence of the properties of dielectrics. He advanced the development of television in Siberia. In 1959, Professor A. A. Vorob'yev was elected deputy of the Verkhovnyy Sovet RSFSR (Supreme Council RSFSR). He is holder of the Lenin order, of two orders of the Red Banner of Labor, of the medal "For Brave Work in the Great Patriotic War", of the great gold medal of the Vystavka dostizheniy narodnogo khozyaystva (Exhibition of the Achievements of Political Economics), and of the bronze medal imeni A. S. Popov. At the beginning of 1960 he was awarded the title of an Honored Scientist and Technologist RSFSR. There is 1 figure.

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29372
S/089/61/011/001/001/010
B102/B214

21,1000

AUTHORS: Glazkov, Yu. Yu., Gerasova, L. A., Dubovskiy, B. G., Krasin, A. K., Kisil', I. M., Kuznetsov, F. M., Serebrennikov, Yu. M., Shelud'ko, V. P., Sharapov, V. N., Pen Fan

TITLE: Investigation of the physical characteristics of the lattice of a uranium - graphite reactor by means of a subcritical insert

PERIODICAL: Atomnaya energiya, v. 11, no. 1, 1961, 5-11

TEXT: This paper gives a description of the experiments carried out since the beginning of 1958 to investigate the physical characteristics of the lattice of a uranium-graphite reactor by means of a subcritical insert. A quadratic lattice (period 200 mm) was studied; the graphite block was 2.2m high and had a diameter of 4 m; its holes had diameters of 41 or 75 mm depending on the uranium rods used. Above and below were reflectors, 60 cm thick; the dimensions of the side reflector could be varied according to the composition of the core. The inner and the outer parts of the core

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Investigation of the , .

were different: The inner part had always rods of 2%-enriched uranium, and the outer one the subcritical insert as a part of the [illegible] of the reactor studied. The rods of the natural as well as the 2% enriched uranium were 1 m long. To measure the [illegible] parameters of a reactor of the type Beloyarskaya GRES (Beloyarsk State Regional Electric Power Plant) ring-shaped sections (1 m long) of the fuel element (up to 1.2 % enriched uranium) simulating the real elements were built in the subcritical insert. Each fuel element channel contained six such elements arranged round a central tube. The reactor of the GRES also had vaporization and steam-superheating channels; these were simulated by having the central tube filled with water for the former, and having it without water for the latter. The characteristics of the systems studied were as follows:

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Investigation of the ...

Inner part of the core (subcritical insert) Number of fuel channels	Elements	Equivalent radius, cm	Outer part of the core Number of the uranium rods with 5% enrichment	Equivalent radius of the whole core, cm
44	rod shaped elements of 10 1.5% enriched; uranium rods 200 mm high	[illegible]	[illegible]	[illegible]
21	the same; rods only 100 mm high	[illegible]	[illegible]	[illegible]
13	"	[illegible]	[illegible]	[illegible]
9	"	[illegible]	[illegible]	[illegible]
1	"	[illegible]	[illegible]	[illegible]
25	rods of natural uranium 35mm thick	[illegible]	[illegible]	[illegible]

homogeneous lattice [illegible]

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Investigation of the ...

In order to be able to measure the ... [illegible] ... must be thermal ... [illegible] ... choice of the ... [illegible] ... the ... neutrons. The spectrum of the thermal neutrons in the center of the insert as depending on the dimensions of the insert was determined by measuring the neutron temperature according to one of the following methods depending: boron filter method, filter method, direct measurement by means of a monochromator. The neutron temperatures for the insert of 13 and 25 rods were found to be 370±5°K (first method), and 316°K and 316°K (for the second method). Also, the resonance escape probability in U^{238} (φ), the fast fission factor (μ), and the thermal utilization factor (f) as well as the cadmium ratio R_{Cd}^{C} for U^{235} (R_{Cd}^{S}) for copper (R_{Cd}^{Cu}) and for gold (R_{Cd}^{Au}) were determined. The results are given in Table 3. The results of the experimental and theoretical determinations of μ are the following:

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Investigation of the ...

Position of the channel	Value of μ experimental	theoretical
Central channel of an insert of 21 channels with water	1.040±0.006	1.033
One channel with water in the center of a thermal graphite column of 70 cm diameter	1.036±0.005	1.030
Central channel of an insert of 21 channels without water	1.042±0.006	1.035

Q for the GRES type reactor was found to be 0.64 (for channel with water) and 0.65 (without water). It was found that, in order to adjust the neutron spectrum in the center of the subcritical insert so that it is characteristic of the given uranium - graphite lattice, it is necessary so to choose the dimensions of the insert so that its equivalent radius is $\sim 3(\sqrt{\tau + L^2})$ cm ($\sqrt{\tau}$ is the slowing down length in the moderator and L the diffusion length). To measure μ it is sufficient to arrange one cell of the lattice under study in the center of the reactor with 2% enriched uranium. The authors thank Ye. F. Makarov, G. M. Vladykov, G. I. Sidorov,

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Investigation of the ...

V. N. Fofanov, V. V. Vavilov, V. A. Semenov, A. N. Galanin, M. V. Bakhtina, M. K. Timonina, A. T. Anfilatov, Yu. S. Ziryukin, Yu. I. Starykh and A. P. Dolgolenko for collaboration; and A. V. Kamayev, M. Ye. Minashin, G. Ya. Rumyantsev and I. G. Morozov for their interest and discussions.
There are 3 figures, 4 tables, and 12 references: 8 Soviet-bloc and 4 non-Soviet-bloc. The three references to English-language publications read as follows: M. Küche. Nucl. Sci. Engng. 2, No. 1, 96 (1957); D. Klein et al. Nucl. Sci. Engng. 3, No. 4, 403 (1958); J. Volpe et al. Nucl. Sci. Engng. 5, No. 6, 360 (1959).

SUBMITTED: December 12, 1960

Legend to Table 3: 1) number of the cells in the insert, 2) homogeneous lattice, 3) construction of the elements and enrichment of the uranium, 4) ring-shaped elements with water, 1.2%, 5) idem, 6) the same without water, 7) 35 cm thick rods of natural uranium, 8) 35 mm thick rods of 2% enriched uranium, 9) experimental, 10) calculated, 11) in the fuel element (according to fragment accumulation), 12) in the graphite of the central cell, 13) in the fuel element. *calculated according to V.V. Orlov; **in agreement with the measurements of M.B. Yegiazarov.

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S/089/61/011/001/002/010
B102/B214

21.1000

AUTHORS: Yevdokimov, Yu. V., Kozlov, V. Ya., Konochkin, V. G. Kochetkov. L. A., Krasin, A. K., Lytkin, V. V., Sever'yanov, V. S., Semenov, B. A., Ushakov, G. N.

TITLE: Experience from work with the First Nuclear Power Plant

PERIODICAL: Atomnaya energiya, v. 11, no. 1, 1961, 12 - 18

TEXT: The First Nuclear Power Plant in the USSR, which was the first in the world, has been successfully operated for seven years; this paper presents a short survey of the experiences accumulated during the first six years at this station. The station itself possesses all the eqipment available at a large research reactor. The construction of the Beloyarskaya GRES (Beloyarsk State Regional Electric Power Plant) represents a further development of the First Nuclear Power Plant. The working of the reactor at different power levels: In the so-called "cold state", at 0.01% of the nominal power, the reactor has the lowest power level at which the automatic power regulator can still function; the rise in this level is checked by measuring the neutron flux; the power level can be doubled within 20 sec.

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Heating begins with a rise of the power level to 5% of the nominal power (first cycle: 160-170°C, pressure in the second cycle: 7 - 8 atm), then to 10% of the nominal power (temperature at the entrance to the reactor: 190°C, steam pressure 12.5 atm); these parameters remain unchanged on further increase of power. The total heating time for the system is 3.5 - 4 hours; during this time, nitrogen is blown in the graphite system to remove oxygen. The parameters of the power station for 50, 75, and 100% of the nominal power are given in Table 1. On shutting the reactor, it is first cooled, by utilizing the natural loss of heat, to the temperature of water in the first cycle (110-120°C), which requires 1.5-2 hours. The cooling water is then removed from circulation and cooled; this enables the reactor to be cooled rapidly. Reliability and duration of the reactor's operation depend on the quality of the fuel element; the station works with tube type elements. The fuel is contained between two tubes of nonrusting steel (the inner is 0.4 mm thick and the outer 0.2 mm thick). This kind proved to be particularly reliable: Not a single element has been dislocated during the whole period the station has been in operation. The system of partial renewal of the fuel element is used for guaranteeing the deepest possible burning. (N. A. Dollezhal et al. reported on this at the Second Geneva

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Conference, 1958). Numerical data about the consumption are given in Table 2. Deformation of the fuel elements were checked, a deformation of 14.20 ± 0.02 mm of the element jackets was found. Experiments relating to the boiling of water in the fuel channels and determination of the hydrodynamic characteristics of the fuel elements in the reactor were started in 1956. The preliminaries were completed in September 1956, and one channel was brought to boiling operation. This first boiling channel worked for 400 hours at thermal loads of $(0.45 - 0.85) \cdot 10^6$ kcal/m^2·hr (steam content 5 - 20% by weight, flow rate 250 kg/hr). As the system proved satisfactory, more channels were brought to boiling operation; in the middle of 1957 there were 70 such channels, more than half of the total. The boiling operation was characterized by the following parameters: Steam content at the exit of the channels: 5 - 25% by weight, thermal load $(0.6 - 1.3) \cdot 10^6$ kcal/m^2·hr, water flow rate 0.7 - 1 m/hr at 100 atm and 190°C at the exit. Since superheating of steam constitutes one of the most important methods for increasing efficiency, experiments in this connection were carried out in the following years with a special experimental loop (Fig. 1) to study the methods of bringing the steam to a superheated state. For this, a method of

Experience from work with ...

starting was perfected which requires only such equipment as is used in normal operation. During the period of transformation of the superheating operation, the superheating channel could either be closed, or it could work without cooling ("dry operation"), or with water cooling. The last named method had a number of advantages. The following starting methods were studied: Starting with continuous increase of the reactor power, starting with decrease of the reactor power, and combined methods (first the former, and then the latter but lowering the power only for about 60 - 70%). To increase the safety of the reactor, a special system was built in 1959 which prevents the escape of the gas - steam mixture into the ventilation system when the tubes of the experimental holes break down. This system "for localizing the damage due to accident" (Fig. 2) not only serves this purpose but also helps to purify the gas after the accident has occurred. The system consists of a cylindrical tank ($6.2\ m^3$) whose lower part ($1.8\ m^3$) is filled with water; in it are placed the cooling coils and special nozzles through which the steam - gas mixture streams into the water in the case of an accident. The gas is introduced in a sensitive gas container. The whole system is placed in a protective container equipped with manometers, thermometers, and dosimeters. There

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2 figures and 2 tables.

SUBMITTED: February 6, 1961

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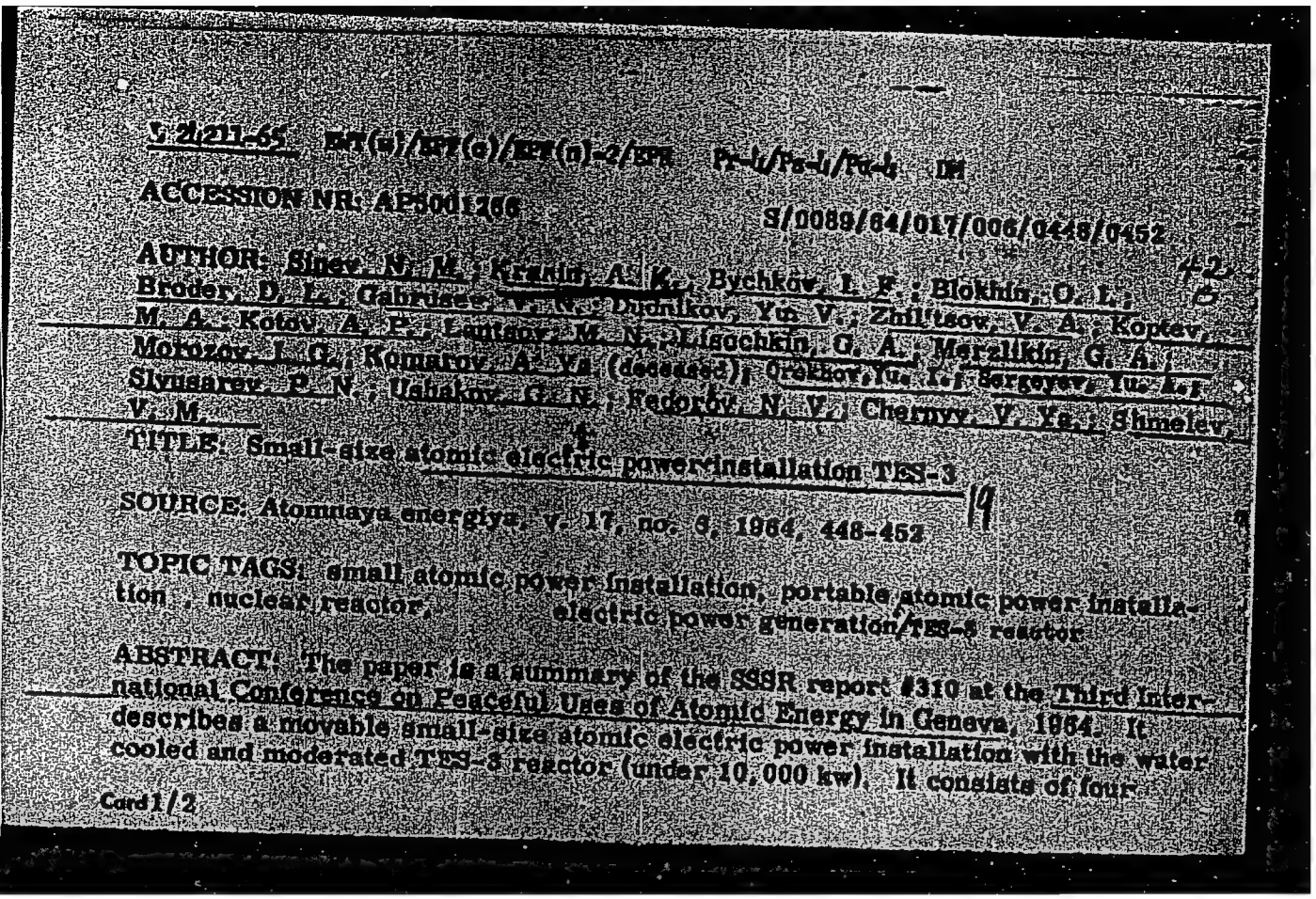


L 21211-65 EWT(m)/EWT(c)/EWT(n)-2/EPR Pr-4/Pa-4/Pu-4 DM

ACCESSION NR: AP5001766 S/0089/64/017/006/0448/0452

AUTHOR: Sinev, N. M.; Kramin, A. K.; Bychkov, I. F.; Blokhin, O. I.; Broder, D. L.; Gabrusev, V. N.; Dudnikov, Yu. V.; Zmil'tsov, V. A.; Koptev, M. A.; Kotov, A. P.; Lantsov, M. N.; Lisochkin, G. A.; Merzlikin, G. A.; Morozov, I. G.; Komarov, A. Ya. (deceased); Orekhov, Yu. I.; Sergeyev, Yu. L.; Slyusarev, P. N.; Ushakov, G. N.; Fedorov, N. V.; Chernyy, V. Ye.; Shmelev, V. M.

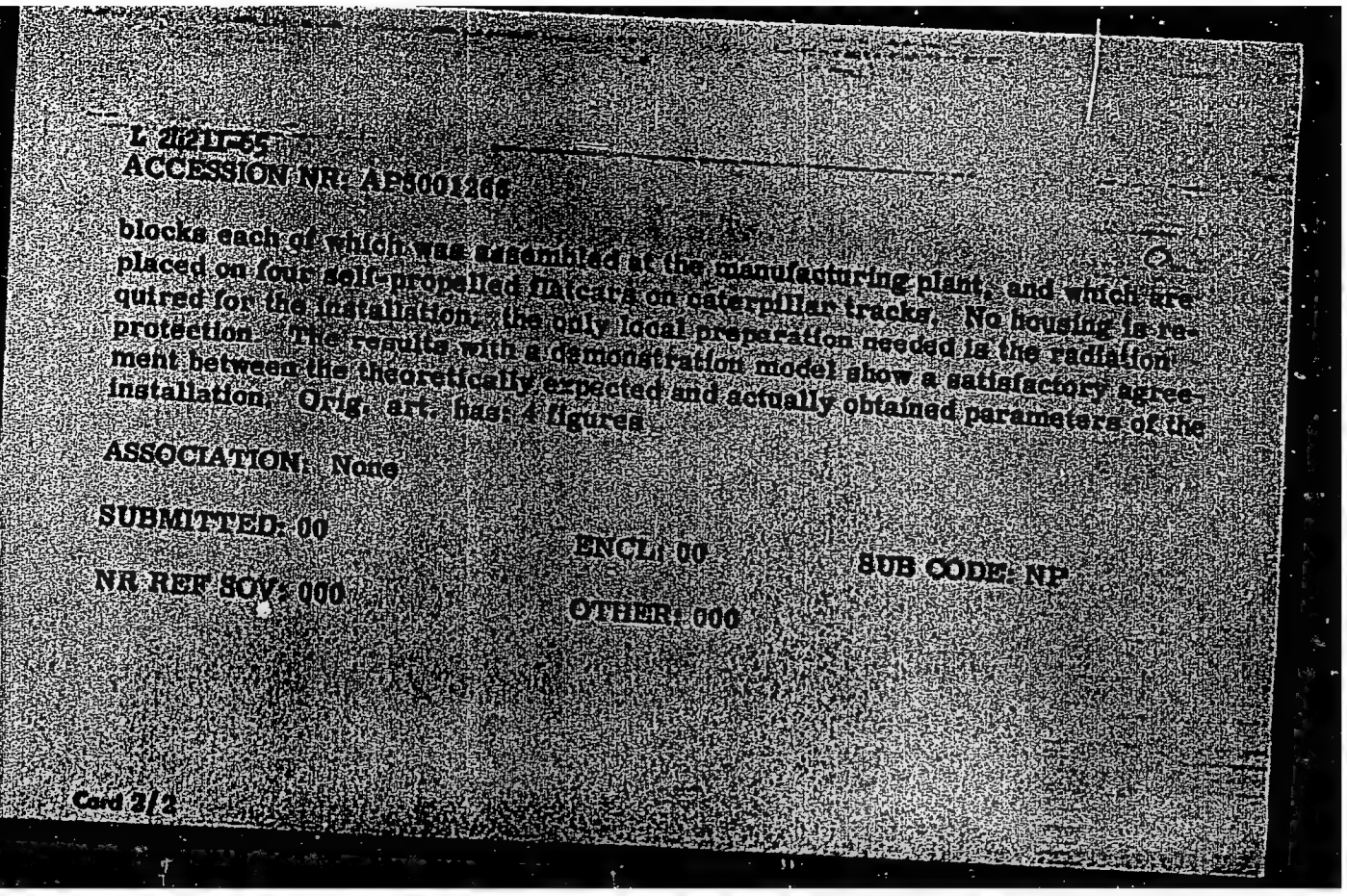
TITLE: Small-size atomic electric power installation TES-3

SOURCE: Atomnaya energiya, v. 17, no. 6, 1964, 448-452

TOPIC TAGS: small atomic power installation, portable atomic power installation, nuclear reactor, electric power generation, TES-3 reactor

ABSTRACT: The paper is a summary of the SSSR report #310 at the Third International Conference on Peaceful Uses of Atomic Energy in Geneva, 1964. It describes a movable small-size atomic electric power installation with the water cooled and moderated TES-3 reactor (under 10,000 kw). It consists of four-

Card 1/2



L 26211-65
ACCESSION NR: AP5001266

blocks each of which was assembled at the manufacturing plant, and which are placed on four self-propelled platforms on caterpillar tracks. No housing is required for the installation, the only local preparation needed is the radiation protection. The results with a demonstration model show a satisfactory agreement between the theoretically expected and actually obtained parameters of the installation. Orig. art. has: 4 figures.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NR REF SOV: 000 OTHER: 000

Card 2/2

L 1996-66 EWT(m)/EPF(c)/EPF(n)-2/EWG(m) WW

ACCESSION NR: AP5014734 UR/0201/65/000/001/0008/0017

AUTHORS: Krasin, A. K.; Navumaw, V. A. (Naumov, V. A.); Savushkin, I. A.; Stralkow, R. I.; Yarashevich, A. I.

TITLE: Physical characteristics of the type IRT-2000 swimming-pool research reactor with loop channels

SOURCE: AN BSSR. Izvestiya. Seriya fiziko-tekhnicheskikh nauk, no. 1, 1965, 8-17

TOPIC TAGS: nuclear research reactor, nuclear reactor component, nuclear reactor technology

ABSTRACT: The article describes a modified standard reactor which went into operation at the Institute of Heat and Mass Exchange of the Academy of Sciences of the Belorussian Republic in May 1962. The original design was described by V. V. Goncharov et al. at the second Geneva Conference in 1958 (Trudy II Mezhdunarodnoy konferen-

Card 1/3

L 1996-66

ACCESSION NR: AP5014734

4

tsii po mirnomu ispol'zovaniyu atomnoy energiee, v. 2, Atomizdat, 1959) and elsewhere. Since the original design made no provision for test loops, the authors describe the changes in the construction of the individual units of the reactor at the location where the loop was installed, the differences arising in the physical characteristics, experimental investigations of the physical characteristics, experimental investigations of the physical characteristics of the modified reactor, including the new critical experiments (performed by Yu. G. Nikolayev of the I. V. Kurchatov Institute of Atomic Energy), and the main results. The latter have shown that installation of a loop channel with approximately 3 kg of steel is feasible, and that optimal materials surrounding the loop channel can be chosen so as to make possible either a maximum run or a maximum flux of thermal neutrons. At a power of 2000 kW the attainable neutron flux is 10^{14} neutron/cm^2 sec. Orig. art. has: 5 figures and 2 tables.

Card 2/3

L 1996-66

ACCESSION NR: AP5014734

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NR REF SOV: 005 OTHER: 004

Card 3/3

L 01500-66 EWT(m)/EPF(c)/EPF(n)-2/EWG(m)/EWP(t)/EWP(b) IJP(c) JL/WW/JG

ACCESSION NR: AP5014738 UR/0201/65/000/001/0052/0053

AUTHORS: Krasin, A. K.; Plindov, H. I. 65

TITLE: Contribution of the (n, 2n) and (n, alpha) effects in beryllium to the neutron multiplication coefficient

SOURCE: AN BSSR Izvestiya. Seriya fiziko-tekhnicheskikh nauk, no. 1, 1965, 52-53

TOPIC TAGS: neutron interaction, alpha particle interaction, beryllium, neutron multiplication coefficient, critical mass, nuclear reactor moderator, nuclear reactor design

ABSTRACT: The purpose of the study was to determine the effect of the reactions mentioned on the critical masses and dimensions of physical assemblies with beryllium moderator and reflector, and to separate the contribution of the fast effect to the multiplication coefficient. To this end, ten-group constants were set up for beryl-

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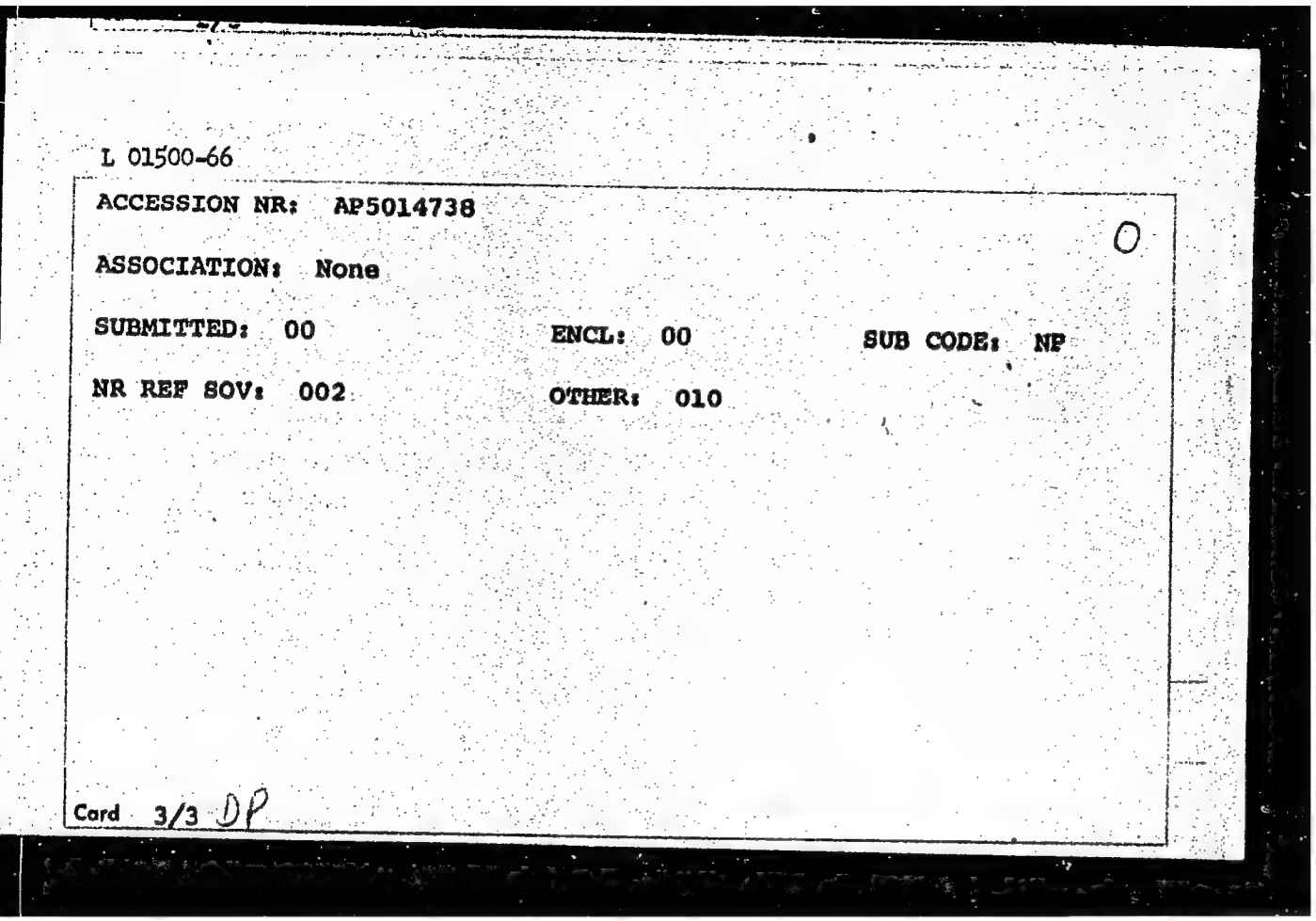
ACCESSION NR: AP5014738

lium. The (n, 2n) reaction was regarded as inelastic scattering leading to the appearance of an additional neutron. The cross sections for the reactions were taken from the literature. To check on the constants, the age of the neutrons of the fission spectrum and the fast-neutron multiplication coefficient were determined for an infinite homogeneous beryllium medium. The value obtained for the neutron age (79 cm^2) agreed with the published data. The multiplication coefficient for fast neutrons was found to be 1.087, in good agreement with theoretical estimates. The resultant data were used to determine the critical masses and the critical dimensions of the physical assemblies described by A. K. Krasin et al. in paper No. 2146 at the second Geneva Conference in 1958. The results are tabulated and show that the fast effect in beryllium is 9--10%, somewhat lower than the 12 $\pm$ 4% cited in the Geneva paper, but still within the experimental error. The data of the present paper, being obtained in the multigroup approximation, are regarded as more accurate. Orig. art. has: 1 table.



L 01500-66

ACCESSION NR: AP5014738

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NR REF SOV: 002 OTHER: 010

Card 3/3 DP

L 40703-65 EPF(c)/EPR(n)-2/EPR/EWT(m)/EWA(m) Pz-4/Pa-4/Pu-4 DM

ACCESSION NR: AP5011915 UR/0089/65/018/002/0175/0177

AUTHOR: Krasin, A. K.; Lyutin, Ye. I.

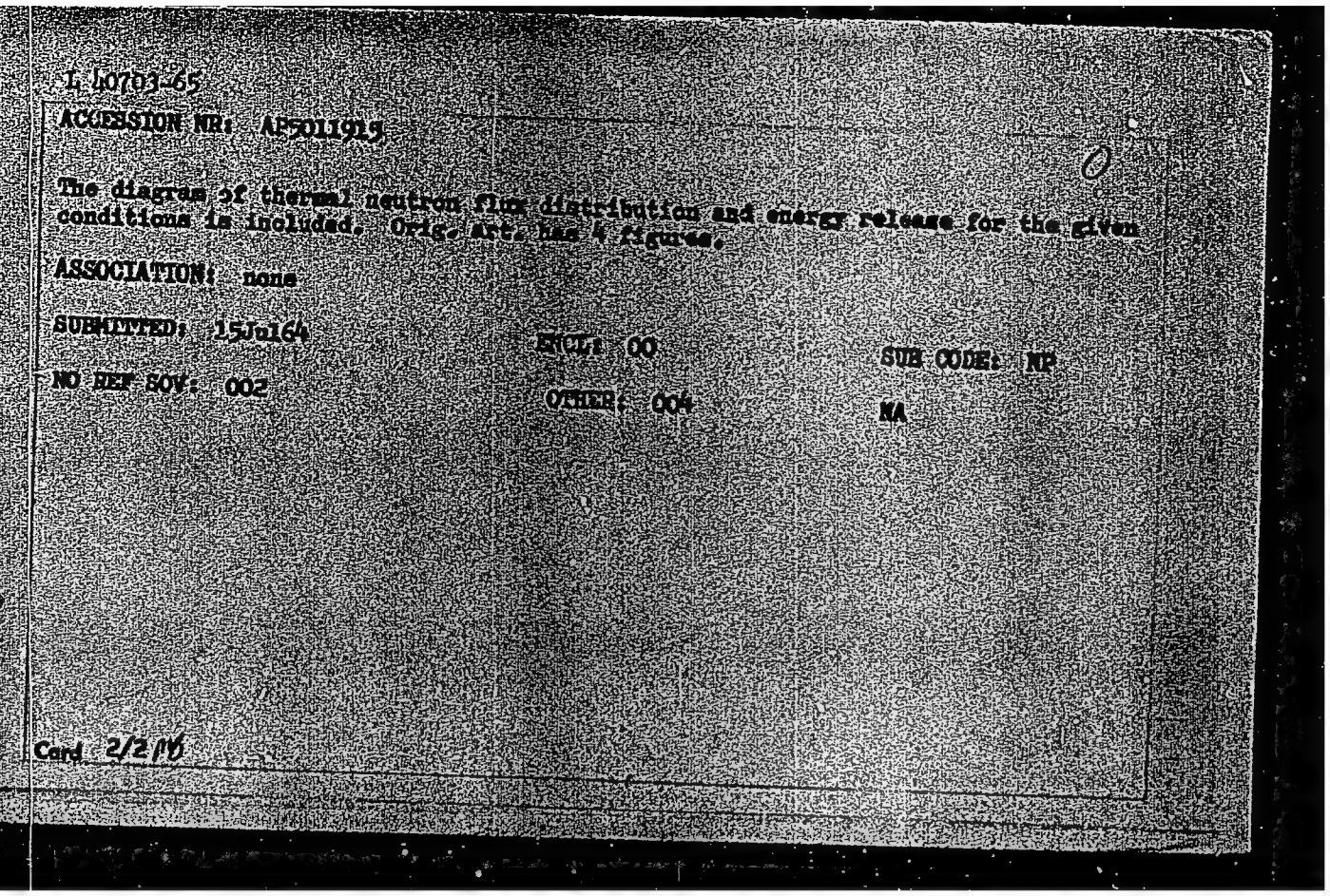
TITLE: Homogeneous critical assembly with profiled (shaped) fuel loading

SOURCE: Atomnaya energiya, v. 18, no. 2, 1965, 175-177

TOPIC TAGS: nuclear reactor, nuclear engineering, nuclear fuel, neutron, particle physics

Abstract: A critical assembly scheme for six-zone zero-power cylindrical reactor fueled with $UO_2(NO_3)_2$ acidified with nitric acid is described. Various concentration fuel solutions were delivered through polyethylene tubes maintained the same solution level in each zone. The radial neutron flux distribution in the active zone center was measured using indium tracers. The reactor reached criticality at the active zone level 39.6 + or - 0.1 cm which corresponds to the critical load of 3250 + or - 30 g ^{235}U. The diagram of radial neutron flux measurements shows the presence of bursts in the thermal neutron distributions which is characteristic of the multi-zone systems. The coefficient of non-uniform fission distribution along the radius is equal to 1.19. The profiled fuel loading law leading to a constant mean energy release along the reactor radius was estimated on the basis of the obtained data and on the assumption of weak thermal neutron field variations.

Card 1/2



L 40703-65

ACCESSION NR: AP5011913

The diagram of thermal neutron flux distribution and energy release for the given conditions is included. Orig. art. has 4 figures.

ASSOCIATION: none

SUBMITTED: 15Jul64 ENCL: 00 SUB CODE: NP

NO REF SOV: 002 OTHER: 004 MA

Card 2/2 fb

L 16470-66 EWT(m)/ETC(f)/EPF(n)-2/EWG(m) WW/DM
ACC NR: AP6005534 SOURCE CODE: UR/0089/66/020/001/0061/0062

AUTHOR: Krasin, A. K.; Yaroshevich, O. I.

ORG: none

43
B

19,55

TITLE: Startup of the critical assembly at the Institute of Nuclear Power Engineering, AN BSSR

SOURCE: Atomnaya energiya, v. 20, no. 1, 1966, 61-62

TOPIC TAGS: chain reaction, fissile material, nuclear reactor moderator, nuclear reactor core, critical assembly, nuclear reactor technology, test stand

ABSTRACT: The authors describe a uranium-water critical assembly put into operation in April 1965 at the Institute of Nuclear Power Engineering, AN BSSR. The installation is designed for experiments on "clean" reactor cores. The stand for the critical assembly consists of the following basic elements: an open tank, components for the reactor core, a system for filling the moderator and controlling its level, a tank for storage and emergency dumping of water and a system for shielding and control. The open tank is a cylinder 1600 mm high and 1500 mm in diameter.

UDC: 621.039.519

Card 1/2

2

L 16470-66
ACC NR: AP6005534

Provision is made for varying the thickness of the lower reflector and for facilitating assembly of new reactor cores. Two safety rods are used, each consisting of two sections: an upper section containing a fissionable material (a type EK-10 fuel element), and a lower section containing a moderator material (boron carbide). The chain reaction in the assembly are controlled by varying the level of the moderator. The device is used for experiments on determining the critical masses of "clean" reactor cores in a wide range of nuclear concentrations of hydrogen and U^{235}, on the distribution of flux density for thermal and epithermal neutrons, etc. Orig. art. has: 1 figure.

SUB CODE: 18/ SUBM DATE: 06Oct65/ ORIG REF: 000/ OTH REF: 000

Card 2/2 mc

L 37155-66 EWT(m)

ACC NR: AP6017281 (N) SOURCE CODE: UR/0201/65/000/004/0005/0010

AUTHOR: Krasin, A. K.; Naumov, V. A.; Kazazyan, N. A.; Kazazyan, V. T. 37 B

ORG: none

TITLE: Radiation apparatus in the lower thermal column of the shut-down IRT-2000 reactor 19

SOURCE: AN BSSR. Vestsi. Seryya fizika-tekhnichnykh navuk, no. 4, 1965, 5-10

TOPIC TAGS: research reactor, thermal reactor, radiation biologic effect, reactor neutron flux, Gamma flux, nuclear reactor shield

ABSTRACT: The purpose of the investigation was to check on the possible access to a niche free of graphite after the reactor has been operating for a certain time at a definite power, since knowledge of the dose intensity in the niche of the stopped reactor makes it possible to estimate the time that a man can stay in it. The principal data used were the results of a two-dimensional two-group calculation of the neutron fluxes in a cylindrical model of the reactor. The results contain data on the fluxes of fast, intermediate, and thermal neutrons in the active zone, reflector, and other elements of the reactor. The various sources of activation radiation that may be present in the stopped reactor are discussed and plots of the relative neutron distribution are given. Also calculated are the γ ray fluxes and dose intensities. The results show that the radiation level in the niche depends on the number of preceding operating daily cycles, but that after approximately 180 days saturation sets in, and

Card 1/2

L 37155-66

ACC NR: AP6017281

the dose intensity is practically independent of the reactor operating time. At an operating power of 1000 kw, the dose intensity in the most dangerous place remains at a rather higher level (85 mr/hr as against the allowed 2.8) even one month after reactor shutdown. This means that no person should come within less than 50 cm from the thermal shield and that a brief stay (~30 min) is permissible in the biological shield region. Orig. art. has: 2 figures, 5 formulas, and 3 tables.

SUB CODE: 06, 18 SUBM DATE: 00/ ORIG REF: 004 OTH REF: 001

Card 2/2 af

L 37157-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6017283 (N) SOURCE CODE: UR/0201/65/000/004/0016/0024

AUTHORS: Krasin, A. K.; Naumov, V. A.; Nikolayeva, G. K.

ORG: none

TITLE: Radiation heat released in materials used to obtain "cold" neutrons

SOURCE: AN BSSR. Vestsi. Seryya fizika-tekhnichnykh navuk, no. 4, 1965, 16-24

TOPIC TAGS: nuclear reactor moderator, resistor neutron flux, slow neutron, thermal neutron, beryllium, lithium compound, hydride/IRT-2000 reactor

ABSTRACT: The authors determine the heat rise of moderating material used to reduce the energy of neutrons from a reactor to a value corresponding to "cold" neutrons (with energy of the order of 0.005 ev). The purpose of the calculation was to design means of cooling the moderator, since high temperatures reduce its efficiency and by the same token increase the energy of the final neutron. The calculations are made for neutrons from the active zone of the IRT-2000 swimming-pool reactor. The heating produced by the interaction of the moderator with gamma rays and with neutrons is calculated separately from the group fluxes and the group constants. The use of liquid helium to cool the moderator and the amount of helium required for the purpose are discussed. In the case of the IRT-2000 reactor a flow of helium of 2 -- 5 kg/hr (the present limit of available liquifiers) makes it possible to cool a moderating insert of LiH (5 cm diameter) or Be (7 cm) not closer than about 35 -- 50 cm from the source.

Card 1/2

L 37157-66

ACC NR: AP6017283

This corresponds in principle to feasibility of locating the moderating inserts directly behind the lead shield of the thermal column of the IRT-2000 reactors in thermal-neutron fluxes (1 — 2) x 10^{13} neut/cm^2 sec. Orig. art. has: 2 figures, 13 formulas, and 6 tables.

SUB CODE: 18/ SUBM DATE: 00/ ORIG REF: 010/ OTH REF: 005/

Card 2/2 af

ACC NR: AP7002874 (A,N) SOURCE CODE: UR/0201/66/000/004/0005/0011

AUTHOR: Krasin, A. K.; Litvinenko, B. A.; Savushkin, I. A.; Obraztsova, Ye. A.

ORG: none

TITLE: Calculation of the radiation endurance of a boron-containing radiation element in the IRT-2000 loop installation

SOURCE: AN BSSR. Vestsi. Seryya fizika-tekhnichnykh navuk, no. 4, 1966, 5-11

TOPIC TAGS: nuclear reactor technology, reactor neutron flux, nuclear radiation, radiation chemistry, boron/ IRT-2000 reactor

ABSTRACT: The authors present the results of calculations aimed at checking the feasibility of using fuel rods containing boron glass fiber (filament diameter 5 - 7 μ) and placed in the center of the IRT-2000 reactor. The radiation element was made of seven steel tubes (14 mm in diameter), forming a bundle, each tube being filled with boron glass enriched by 90% with B^{10}. The glass contained 80% (by weight) of B^{10} enriched to 90%. The calculations yield the optimal B^{10} concentration, the radiation power (the energy absorbed in the reagent), and also the change effected in the reactivity of the reactor by placing of the boron-containing element in the center of the reactor. The calculations demonstrate the feasibility of obtaining a sufficiently high radiation power with this type of element, sufficient for radiation-chemistry research. An effective way of increasing the radiation power is to increase the content of the B^{10} in the fiberglass filaments. In the particular

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ACC NR: AP7002874

reactor employed, with a neutron flux ~6 x 10^{12} neut/cm^2-sec thermal and ~1.4 x 10^{13} neut/cm^2-sec intermediate, the reactivity margin was found to be quite high (~4.2%). Orig. art. has: 4 figures and 8 formulas.

SUB CODE: 18/ SUBM DATE: 12Jun66/ ORIG REF: 003/ OTH REF: 002

Card 2/2

ACC NR: AP7002875 (AN) SOURCE CODE: UR/0201/66/000/004/0012/0016

AUTHOR: Krasin, A. K.; Danilevich, L. A.; Levadny, V. A.; Nosaw, H. A.; Sapozhnikaw, U. U.; Churkin, Yu. I.; Yarashevich, A. I.

ORG: none

TITLE: Critical reaction for investigating pure uranium water lattices

SOURCE: AN BSSR. Vestsi. Seryya fizika-tekhnichnykh navuk, no. 4, 1966, 12-16

TOPIC TAGS: uranium, nuclear reactor, nuclear physics

ABSTRACT: The article contains a technical description of the design of the critical reactor "Roza" (see Fig. 1) developed at the Institute of Nuclear Physics AN BSSR for studies in the physics of nuclear reactors. It also contains certain physical characteristics of the same reactor and briefly describes the control and breakdown protection systems. A program of experimentation for the reactor is presented. Orig. art. has: 3 figures. [Based on authors' abstract] [NT]

Card 1/2

ACC NR: AP7002875

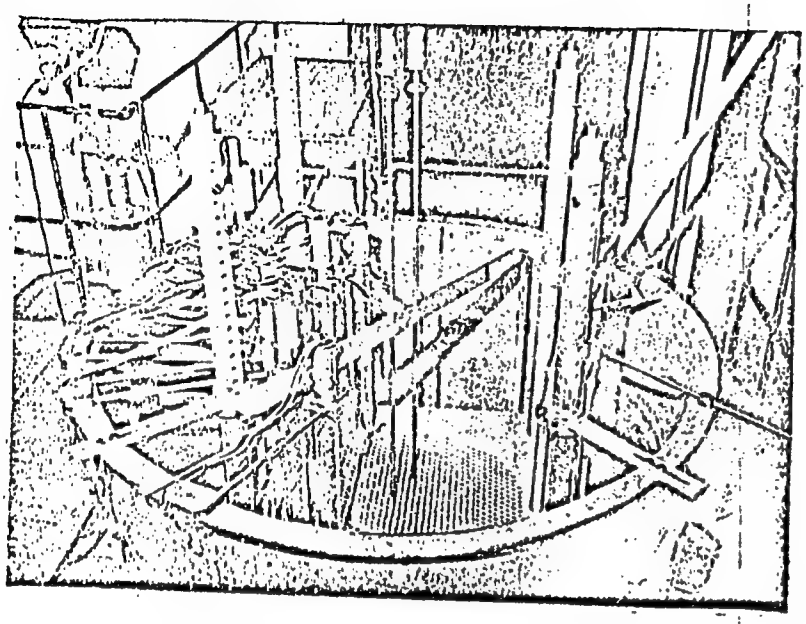


Fig. 1. Overall view of the critical reactor "Roza"

SUB CODE: 18/SUBM DATE: none/ORIG REF: 002/

Card 2/2

ERO, E.L.; GALINOVSKAYA, S.V.; KRASIN, A.Ya.; OBRAZTSOVA, V.I.

Fertilizer in flower cultivation. Biul.Glav.bot. sada no.17:103-105 '54. (MLRA 8:3)

(Floriculture) (Fertilizers and manures)

KRASIN, L.A., inzh.

Efficient method of wire identification of a multicore cable. Transp. stroi. 15 no.3:40-50 Mr '65. (MIRA 18:11)

L 07138-67

ACC NR: AP7001037 SOURCE CODE: UR/0410/66/000/003/0032/0036

AUTHOR: Arsh, E. I.; Krasin, L. A., (Dnepropetrovsk) 26

ORG: none B

TITLE: Method of automating the measurements of the frequency characteristics of the parameters of dielectrics

SOURCE: Avtometriya, no. 3, 1966, 32-36

TOPIC TAGS: dielectric material, frequency characteristic

ABSTRACT: It is shown that the automation of the determination of the frequency characteristics of permittivity and loss-angle tangent, which enhances the accuracy and reduces the labor requirement of the measurements, can be accomplished by means of a comparison of two identical self-excited frequency oscillators when the dielectric specimen is placed in the capacitor of the tank circuit of one of these oscillators. The relative error of this method does not exceed the error of the known resonance methods with circuits containing lumped elements. The use of computing units of the analog type makes it possible to directly determine the frequency characteristics of dielectrics and to eliminate the labor-consuming analysis of measurement findings. The pertinent formulas are derived. This method of automatic measurements can be used to investigate the parameters of new dielectrics and to carry out extensive studies of the electrical properties of various materials and rocks. Orig art. has: 18 formulas. [JPRS: 38,490]

Card 1/1 SUB CODE: 20, 09 / SUBM DATE: 06 Sep65 / ORIG REF: 004 / OTH REF: 001

0924 0015

KRASIN, N.A.

We shall work better and better. Put' i put.khoz. 6 no.2:7-8 '62. (MIRA 15:2)

1. Zamestitel' nachal'nika Terensayskoy distantsii puti Kuybyshevskoy dorogi.
(Railroads--Labor productivity)

KRASIN, N. A., inzh. (Tashkent)

New developments in rail inspection. Put' i put. khoz. 6 no.9:30 '62. (MIRA 15:10)

(Railroads—Rails)

KRASIN, N.A., inzh. (Tashkent)

Experience in the storage of tools. Put' i put.khoz. 7 no.2:44 '63.
(MIRA 16:2)

(Railroads—Tools and implements)

KRASIN, N.A., inzh. (Tashkent)

Standard design of a section storehouse. Put' i put.khoz. 6 no.11:16 '62. (MIRA 16:1)
(Railroads—Buildings and structures)

KRASIN, N.A., inzh. (Tashkent)

Is there a need for rail canting on the switch tracks. Put' i put.khoz. 7 no.1:46 '63. (MIRA 16:3)

(Railroads—Track)

KRASIN, P.A.

Four-bit cutting tools. Izobr. v SSSR 2 no.6:15 Je '57.
(Cutting tools) (MLRA 10:8)

L 65124-65 EWP(e)/EWT(m)/EWP(j)/EWP(b) WH

ACCESSION NR: AP5021588 UR/0286/65/000/013/0058/0059

AUTHORS: Zhukovskaya, Ye. A.; Klochina, N. A.; Krasin, V. I.; Trusovtseva, M. S.; Tikhova, M. V.

TITLE: Apparatus for depositing current-conducting films on glass. Class 32, No. 172458

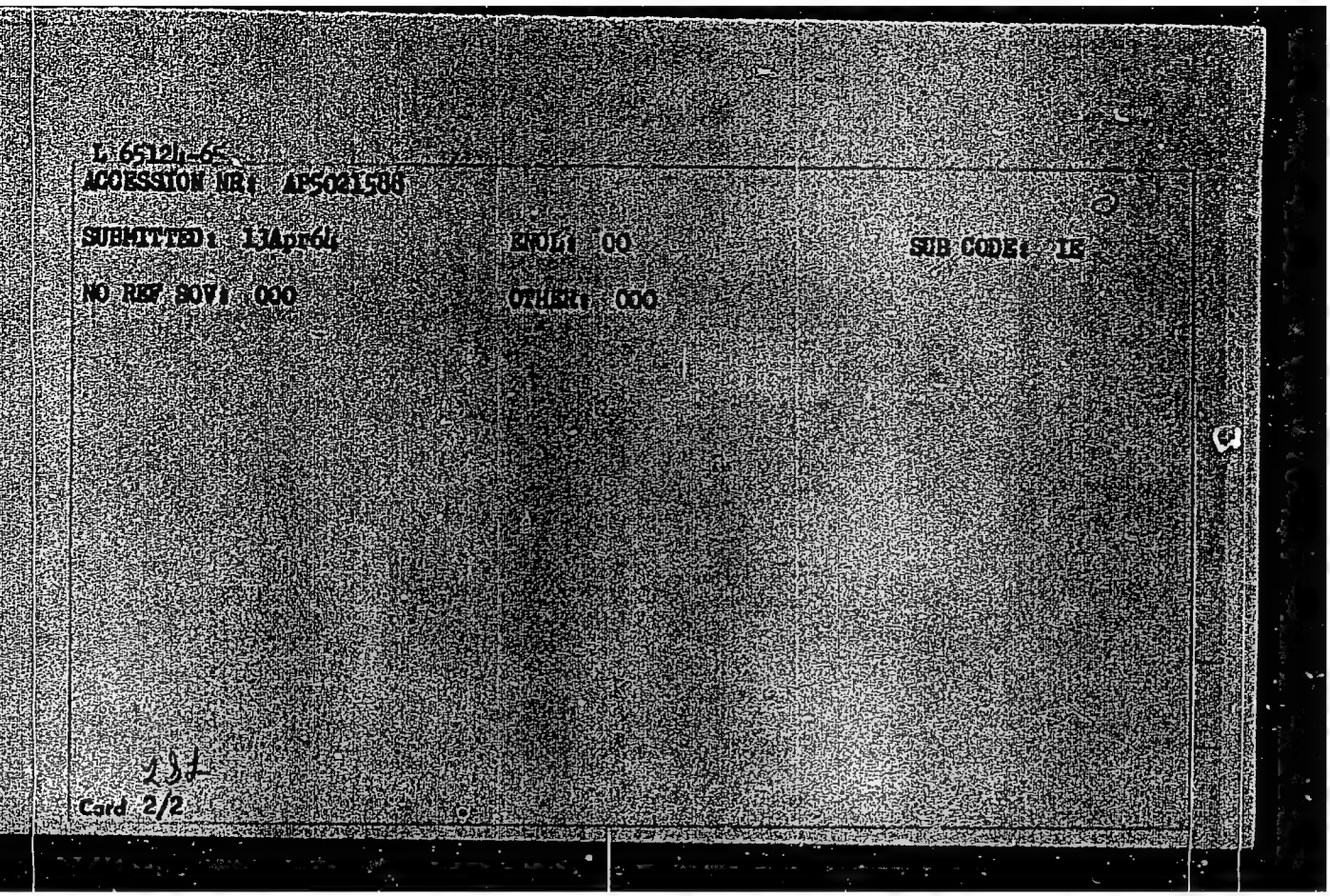
SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 13, 1965, 58-59

TOPIC TAGS: film processing, thin film circuit, industrial blower, glass coating

ABSTRACT: This Author Certificate presents an apparatus for depositing current-conducting films on glass. The apparatus contains supports with blowers, plates, fixing connectors, and a reducer with an electric motor. To improve the quality of the current-conducting film deposition at a desired resistance gradient, and to improve the conditions for cooling a plate and for reducing its deformation, the apparatus contains a crankshaft-operated rocking device with two crankshafts mounted on the fingers of a shaft. One of the crankshafts is geared to the support for the blowers and the other to the reducer.

ASSOCIATION: none

Card 1/2



KRASIN, V.P.

AUTHOR: Sergeyev, A.S., Docent 105-58-5-26/28

TITLE: Dissertations (Dissertatsii)

PERIODICAL: Elektrichestvo, 1958, Nr 5, pp. 93-93 (USSR)

ABSTRACT: For the Degree of Candidate of Technical Sciences:
At the Yerevan Polytechnic Institute imeni Marks (Yerevanskiy politekhnicheskiy institut im. Marksa):
A.Kh.Saradzhev on January 9, 1946 "Supplies for the Requirements of Automatized Hydraulic Power Plants". Official opponents: Professor A.Ya.Ter-Khachaturov and N.V.Gabashvili, Docent. Candidate of Technical Sciences.
At the Polytechnic Institute of Belorussia imeni Stalin (Belorusskiy politekhnicheskiy institut im.Stalina):
Ya.Yu.Slepyan on March 27, 1953 "Drying of Power Transformers by the Method of Losses in the Case of Electric Networks in Rural Districts". Official opponents: L.Ye.Ebin, Professor, Doctor of Technical Sciences and A.I.Sobolev, Docent, Candidate of Technical Sciences.
V.P.Krasin on May 29, 1953 "The Automatic Re-Establishment of Connection in Electric Networks and Plants of Mineral Oil Fields

Card 1/4

by 2-6 kV voltage". Official opponents: I.I.Greben', Professor, Doctor of Technical Sciences and A.I.Rutskiy, Docent, Candidate of Technical Sciences.

At the Institute for Power Engineering AS Uzbek SSR (Institut energetiki AN Uzbekskoy SSR):

M.Ye.Syrkin-Shklovskiy on November 5, 1947 "Some Problems Connected with the Theory of Resonance in Multiphase Circuits". Official opponents: N.N.Shchedrin, Professor, Doctor of Technical Sciences and G.R.Rakhimov, Docent, Candidate of Technical Sciences.

A.A.Inogamov on December 29, 1949 "The Investigation of Asymmetric Modes of Operation of Three-Phase Transformers". Official opponents: N.N.Shchedrin, Professor, Doctor of Technical Sciences and M.Z.Khamudkhanov, Docent, Candidate of Technical Sciences.

I.A.Reyneke on December 29, 1949 "Investigation of the Basic Properties of Independent Inverters in Connection with the Problems of D.C.Transformation". Official opponents: V.P.Zakharov, Doctor of Technical Sciences and Rakhimov, G.R., Docent, Candidate of Technical Sciences.

Dissertations

105-58-5-26/28

E.G.Faynshteyn on May 6, 1950 "Taking Account of the Influence Exercised by Rectification Load when Calculating Asymmetry Modes of Operations in Energy Systems". Official opponents: V.P. Zakharov, Professor, Doctor of Technical Sciences and G.R.Rakhimov, Docent, Candidate of Technical Sciences.
S.M.Timofeyev on February 21, 1953 "Investigation of an Electric Device for the Automation Control of Rotational Speed in Water Turbines with a Sensitive Element Operation According to The Electrodynamical Principle". Official opponents: N.N.Shchedrin, Professor, Doctor of Technical Sciences and M.Z.Khamudkhanov, Docent, Candidate of Technical Sciences.
L.M.Rotenburg on February 21, 1953 "Experimental Investigation of Steel Lines and the Analytical Calculation of Short-Circuit Currents in Complicated Networks with Steel Lines". Official opponents: N.N.Shchedrin, Professor, Doctor of Technical Sciences and G.R.Rakhimov, Docent, Candidate of Technical Sciences.

Card 3/4

Dissertations

105-58-5-26/28

N.A.Troitskiy on September 26, 1953 "The Basic Properties of an Invertor with Additional Controlling Electromotive Force and Open Transformer Triangle". Official opponents: V.P.Zakharov, Professor, Doctor of Technical Sciences, M.Z.Khamudkhanov, Docent, Candidate of Technical Sciences and I.A.Reyneke, Docent, Candidate of Technical Sciences.

AVAILABLE: Library of Congress

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Card 4/4

KRASIN, V.P.

KRASIN, V.P., inzh.; TSEYTLIN, A.N., inzh.

Using grinding wheels with graphite fillers. Mashinostroitel' no.12:24-25 D '57. (MIRA 10:12)

(Grinding wheels)

MEKHEDKO, F.V., kand.tekhn.nauk, dotsent; MINKOVSKIY, D.I., kand.tekhn. nauk, dotsent; KRASIN, V.P., kand.tekhn.nauk, dotsent

Review of I.V.Voloshin's monograph "Direct current networks containing thermistors." Izv. vys. ucheb. zav.; energ. 7 no.3:122-123 Mr '64. (MIRA 17:4)

KRASIN, V. P., kand. tekhn. nauk, dotsent; KRAS'KO, A. S., inzh.; SKVARKO, E. A., inzh.

Automatic control systems for electric furnace departments of glass fiber plants. Izv. vys. ucheb. zav.; energ. 7 no.5:103-105 My '64. (MIRA 17:7)

1. Belorusskiy politekhnicheskiy institut. Predstavlena kafedroy elektricheskikh stantsiy.

KRASIN, Yu., kand. filisof. nauk

Marxist-Leninist theory of socialist revolution and the present.
Komm.Vooruzh.Sil 4 no. 20:9-18 O '63. (MIRA 17:5)

KRASIN, YURIY ANDREYEVICH

Mirnoye sosushchestvovaniye; forma klassovoy bor'by. Moskva, Gospolitizdat, 1961.

80 p.

Includes bibliographical references.

KRASINA, A.S.

"Leikhtenbergit" from the contact of a granite dike with ultrabasic rocks in the Il'men reservation. Trudy Inst. geol. UFAN SSSR no.70:261-264 '65. (MIRA 18:12)

KRASINETS, S.S.

Significance of bivalve phyllopod crustaceans (Conchostraca) for the stratigraphy of Upper Mesozoic freshwater-continental sediments in eastern Transbaikalia. Mat. po geol. i pol. iskop. Chit. obl. no.1:32-64 '63. (MIRA 17:6)

KRASINETS, S.S.

New Lower Cretaceous (Conchostraca, Crustacea) in eastern Transbaikalia. Geol. i geofiz. no.9:115-120 '64. (MIRA 18:7)

1. Chitinskoye geologicheskoye upravleniye.

KRASINETS, S.S.

Ontogenesis and phylogenic relations of a new species Bairdestheria (Crustacea). Paleot. zhur. no.3:84-88 '63.
(MIRA 16:10)

1. Chitinskoye geologicheskoye upravleniye Geologicheskogo komiteta SSSR.

KRASIN'KOV, V. G.

COMPONENTS

"High Sensitivity Vacuum Relay", By K.P. Yegorov, V.G. Krasin'kov and L.V. Reyman, Elektrosvyaz', No 9, September 1957, pp 58-64.

Description of a relay designed for operation at 0.01 -- 0.05 microamperes, with a winding resistance of 800 ± 100 ohms, a current-carrying ability 1 -- 2 ma, and an operating time of 0.5 seconds.

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S/109/63/008/002/010/028
D413/D308

AUTHORS: Iorish, A.Ye., Krasin'kova, M.V., Moyzhes, B.Ya., and Sorokin, O.V.

TITLE: The thermal emf, electric conductance and resistance variation in a magnetic field of barium-strontium oxide

PERIODICAL: Radiotekhnika i elektronika, v. 8, no. 2, 1963, 269-278

TEXT: Although a number of papers have dealt with measurements of thermal emf, $\Delta\rho/\rho$ in a magnetic field, and electrical conductance of cathode oxide coatings, these data have been considered in isolation. Here they are all examined together in the light of the accepted theory that conduction in oxide coatings occurs through the pores, which are filled with electron gas by thermionic emission from their walls. First a theoretical treatment is given for the values of thermal emf, conductance and $\Delta\rho/\rho$ for the electron gas in the pores, and then experimental results for barium-strontium oxide

Card 1/2

The thermal emf, ...

S/109/63/008/002/010/028
D413/D308

are presented and discussed. The linear relation of $\Delta\rho/\rho$ to H in weak magnetic fields is explained; the work function relative to the bottom of the conduction zone is evaluated; the dimensions of the pores for maximum conductance are calculated with allowance for the space-charge in the pores. There are 8 figures.

SUBMITTED: April 26, 1962

Card 2/2

L 01257-67 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6031031 SOURCE CODE: UR/0109/66/011/009/1666/1673

AUTHOR: Krasin'kova, M. V.; Moyzhes, B. Ya.; Shklyar, A. G.

ORG: none

TITLE Electric and emission properties of (CaSr)O

SOURCE: Radiotekhnika i elektronika, v. 11, no. 9, 1966, 1666-1673

TOPIC TAGS: calcium strontium oxide, resistivity, thermal emf, work function, thermionic emission, emission property, electric property

ABSTRACT: The temperature dependence of resistivity, the thermal emf coefficient and variation in resistance in the magnetic field of porous (CaSr)O is investigated over the temperature range of 300—1250K. The data obtained confirm the hypothesis on the presence at high temperatures, due to thermal emission from the walls, of electric conductivity along the pores filled with electron gas. An agreement was obtained for the values of the electron work function in the pores of the coating which was calculated from thermal emf and of the values of electric conductivity over the temperature range of 800—1250K. The electron work func-

Card 1/2 UDC: 621.385.735

L 01257-67
ACC NR: AP6031031

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tion from the external surface of the oxide was determined from the results of measurements of the thermal emission under saturation conditions over the temperature range of 400—1150K. An agreement was obtained for the electron work function from the external surface of the oxide and the electron work function into the pores. The plate work function in tubes using (CaSr)O cathodes was determined. Its value is higher by 0.5—0.6 ev than in the case of (BaSr)O cathodes in identical tubes. Orig. art. has: 7 figures, 7 formulas and a bibliography of 7 titles. [Authors' abstract]

[DW]

SUB CODE: 07, 09/ SUBM DATE: 31Mar65/ ORIG REF: 004/ OTH REF: 003/

hs

Card 2/2

ACCESSION NR: AP4017600 S/0109/64/009/002/0300/0307

AUTHOR: Dubova, T. A.; Iorish, A. Ye.; Krasin'kova, M. V.; Moyzhes, B. Ya.; Petrov, I. N.; Sorokin, O. V.; Chudnovskiy, F. A.

TITLE: Electrical conductivity and thermo-emf of a barium-strontium oxide in a magnetic field

SOURCE: Radiotekhnika i elektronika, v. 9, no. 2, 1964, 300-307

TOPIC TAGS: electrical conductivity, thermo emf, oxide coated cathode, barium strontium oxide, barium strontium oxide thermo emf, barium strontium oxide conductivity

ABSTRACT: Measurements were taken of factory specimens of Ba-Sr oxide, 100-200-microns thick, placed between two cylindrical nickel bases (see Enclosure 1) and subjected to a transverse magnetic field. One of the tubes was equipped with a ring anode and served to measure the thermo-emission from the

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ACCESSION NR: AP4017600

side surface of the oxide. The effect of temperature and the magnetic field on the resistivity and thermo-emf of the Ba-Sr oxide was investigated. Estimated from experimental results, the free-path length of an electron in the cathode pores is 4-30 microns and the electron mobility is from 3.5×10^4 to 2×10^5 cm^2/v sec for the various specimens. The thermodynamic work function, electron concentration, and conductivity are also estimated. It is inferred that the pores in the oxide cathode must be open and intercommunicating and, therefore, that under total thermionic-current conditions, the electrons must be emitted by the entire near-surface layer of the oxide; this fact may, in part, explain the abnormally high Schottky effect in oxide cathodes. Orig. art. has: 7 figures, 13 formulas, and 1 table.

ASSOCIATION: none

SUBMITTED: 30Dec62 DATE ACQ: 18Mar64 ENCL: 01

SUB CODE: GE NO REF SOV: 001 OTHER: 003

Card 2/3

1. YHENIKEYEVA, KH. SH; KRASINOVA, N. KH.; RAKHIMZHANOVA, M. T.

2. USSR (600)

4. Glaucoma

7. Concition of the vegetative nervious system in glaucoma. Vest. oft. 31 no 5, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January, 1953. Unclassified.

1. KRASINOVSKIY, V.

2. USSR (600)

4. Floors

7. Constructing nailless floors in hog houses. Sel'. stroi. 7 no. 6 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified.

ASAF'YEV, B.V.; TIGRANOV, G.G., red.; KRASINSKAYA, A., red.; YARMAK, A., tekhn. red.

[Sketches of Armenia] Ocherki ob Armenii. Red.-sost. G.G.Tigranov. Moskva, Sovetskii kompozitor, 1958. 31 p. (MIRA 11:10)
(Armenia--Description and travel)

KRASIN.KAYA, A. L.

Experience in the organization of delivery service in a telecommunication center. Vest. sviazi 25 no.3:17-18 Mr '65.
(MIRA 18:5)

1. Starshiy inzh. normativno-issledovatel'skoy gruppy Ivanovskogo oblastnogo upravleniya svyazi.

KRASINSKAYA, A. L.

"Characteristics of the Postembryonic Development of Uroplitella Minutissima Berlese (Parasitiformes, Uropodina)."

Tenth Conference on Parasitological Problems and Diseases with Natural Reservoirs, 22-29 October 1959, Vol. II, Publishing House of Academy of Sciences, USSR, Moscow-Leningrad, 1959.

Zoological Institute, USSR Academy of Sciences, Leningrad

KRASINSKAYA, A.L.

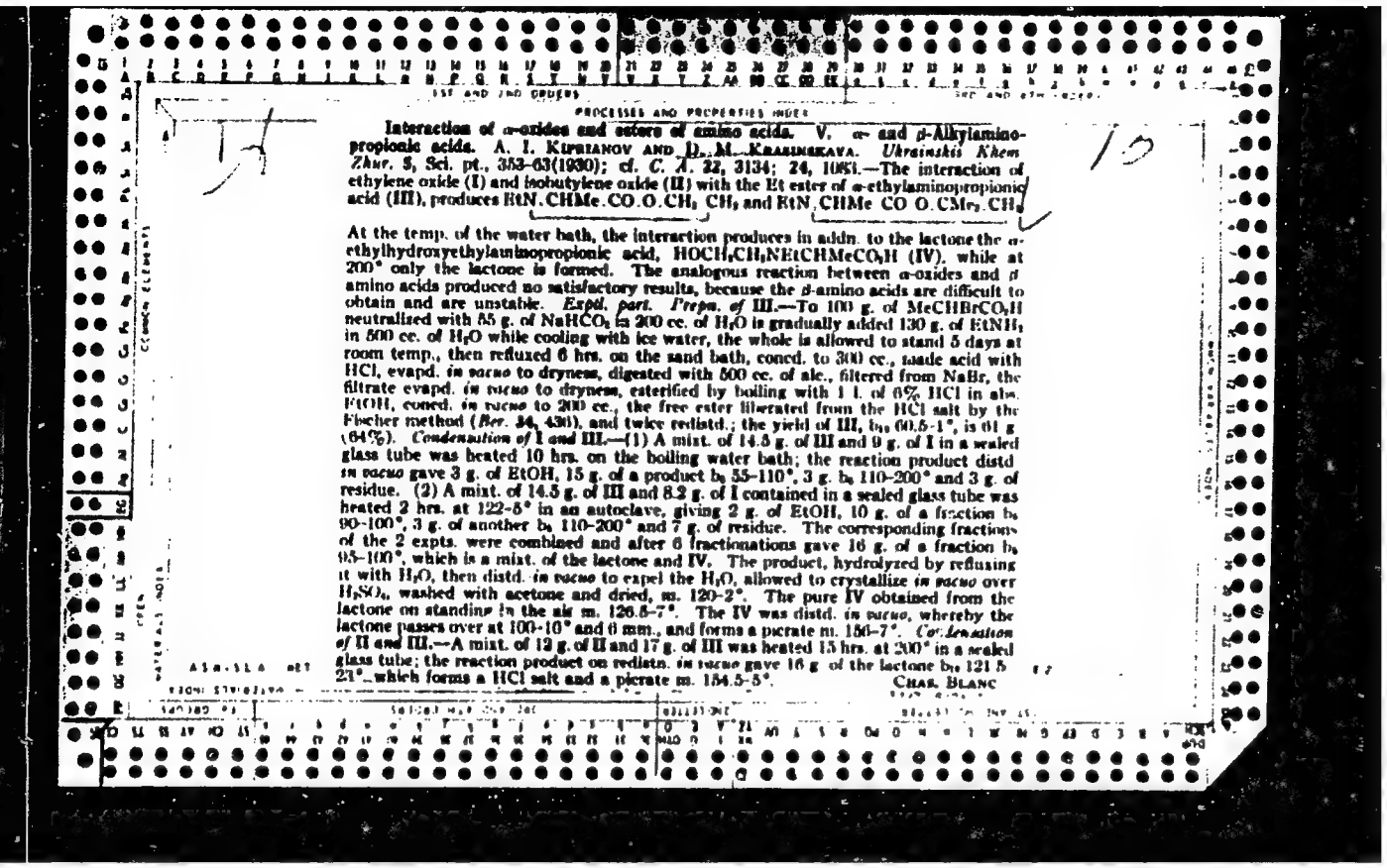
Biology of the apple gall mite Eriophyes (Aceria) mali (Nalepa, 1917) Liro, 1951. Paraz.sbor. 19:249-262 '60. (MIRA 13:8)

1. Zoologicheskiy institut Akademii nauk SSSR.
(Ryazan Province--Mites)
(Apple--Diseases and pests)

KRASINSKAYA, A.L.

Morphological and biological characteristics of postembryonal development of Uropodina in Leningrad Province. Paraz. sbor. 20:108-147 '61. (MIRA 14:9)

1. Zoologicheskiy institut AN SSSR.
(LENINGRAD PROVINCE--MITES) (INSECTS--DEVELOPMENT)

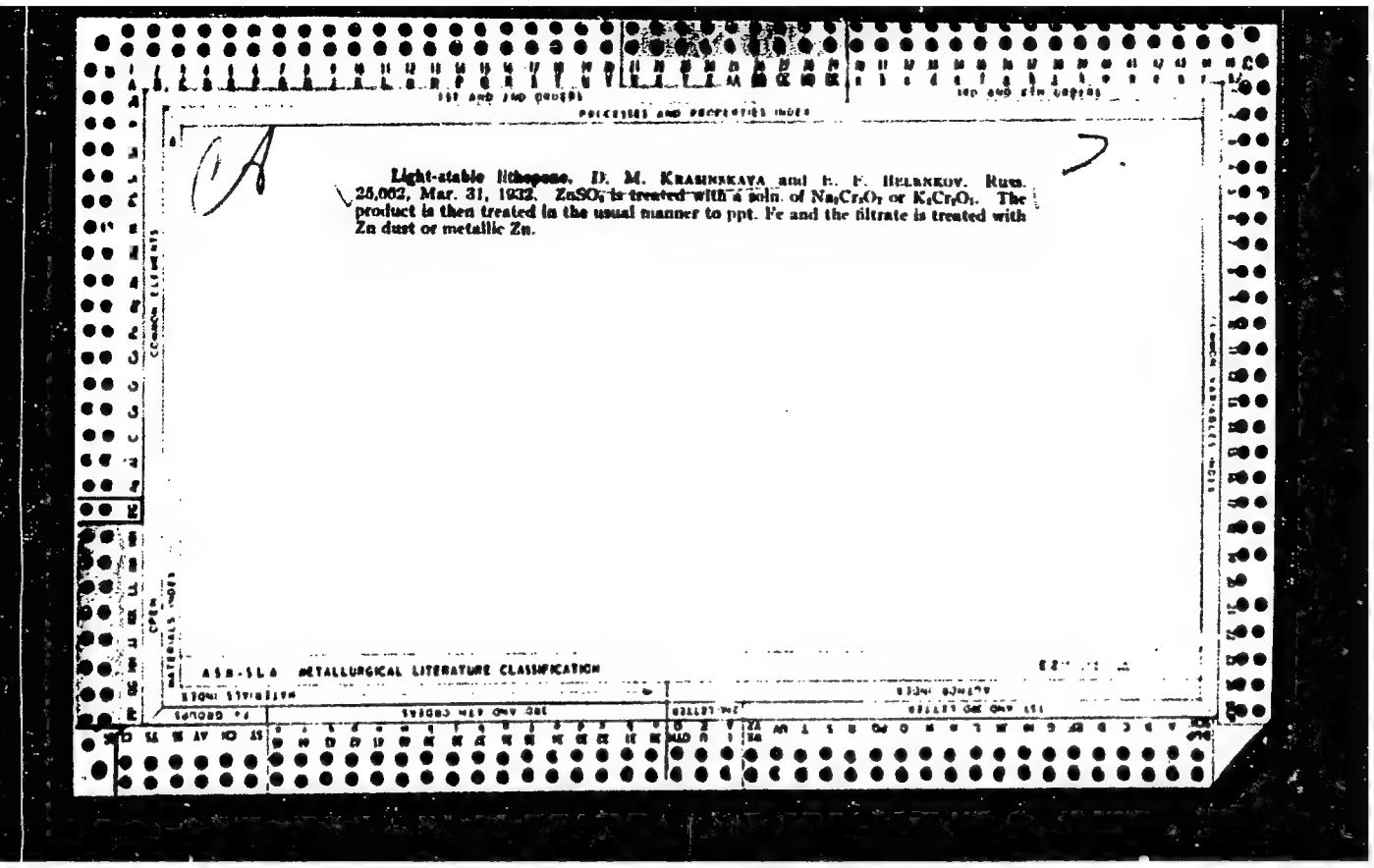


PROCESSES AND PROPERTIES INDEX

Interaction of α-oxides and esters of amino acids. V. α- and β-Alkylaminopropionic acids. A. I. Kiprianov and D. M. Krasinskaya. *Ukrainskii Khem. Zhur.* 5, Sci. pt., 353–63(1930); cf. *C. A.* 22, 3134; 24, 1083.—The interaction of ethylene oxide (I) and isobutylene oxide (II) with the Et ester of α-ethylaminopropionic acid (III), produces $EtN.CHMe.CO.O.CH_2.CH_2$ and $EtN.CHMe.CO.O.CMe_2.CH_2$

At the temp. of the water bath, the interaction produces in addn. to the lactone the α-ethylhydroxyethylaminopropionic acid, $HOCH_2CH_2NEtCHMeCO_2H$ (IV), while at 200° only the lactone is formed. The analogous reaction between α-oxides and β amino acids produced no satisfactory results, because the β-amino acids are difficult to obtain and are unstable. *Exptl. part. Prepn. of* III.—To 100 g. of $MeCHBrCO_2H$ neutralized with 85 g. of $NaHCO_3$ in 200 cc. of H_2O is gradually added 130 g. of $EtNH_2$ in 500 cc. of H_2O while cooling with ice water, the whole is allowed to stand 5 days at room temp., then refluxed 6 hrs. on the sand bath, concd. to 300 cc., made acid with HCl, evapd. *in vacuo* to dryness, digested with 500 cc. of alc., filtered from NaBr, the filtrate evapd. *in vacuo* to dryness, esterified by boiling with 1 l. of 6% HCl in abs. EtOH, concd. *in vacuo* to 200 cc., the free ester liberated from the HCl salt by the Fischer method (*Ber.* 34, 430), and twice redistd.; the yield of III, b_{15} 60.5–1°, is 61 g. (64%). *Condensation of* I *and* III.—(1) A mixt. of 14.5 g. of III and 9 g. of I in a sealed glass tube was heated 10 hrs. on the boiling water bath; the reaction product distd. *in vacuo* gave 3 g. of EtOH, 15 g. of a product b_6 55–110°, 3 g. b_6 110–200° and 3 g. of residue. (2) A mixt. of 14.5 g. of III and 8.2 g. of I contained in a sealed glass tube was heated 2 hrs. at 122–5° in an autoclave, giving 2 g. of EtOH, 10 g. of a fraction b_6 90–100°, 3 g. of another b_6 110–200° and 7 g. of residue. The corresponding fractions of the 2 expts. were combined and after 6 fractionations gave 16 g. of a fraction b_6 95–100°, which is a mixt. of the lactone and IV. The product, hydrolyzed by refluxing it with H_2O, then distd. *in vacuo* to expel the H_2O, allowed to crystallize *in vacuo* over H_2SO_4, washed with acetone and dried, m. 120–2°. The pure IV obtained from the lactone on standing in the air m. 126.5–7°. The IV was distd. *in vacuo*, whereby the lactone passes over at 100–10° and 6 mm., and forms a picrate m. 150–7°. *Condensation of* II *and* III.—A mixt. of 12 g. of II and 17 g. of III was heated 15 hrs. at 200° in a sealed glass tube; the reaction product on redistn. *in vacuo* gave 16 g. of the lactone b_{15} 121.5–27°, which forms a HCl salt and a picrate m. 154.5–5°.

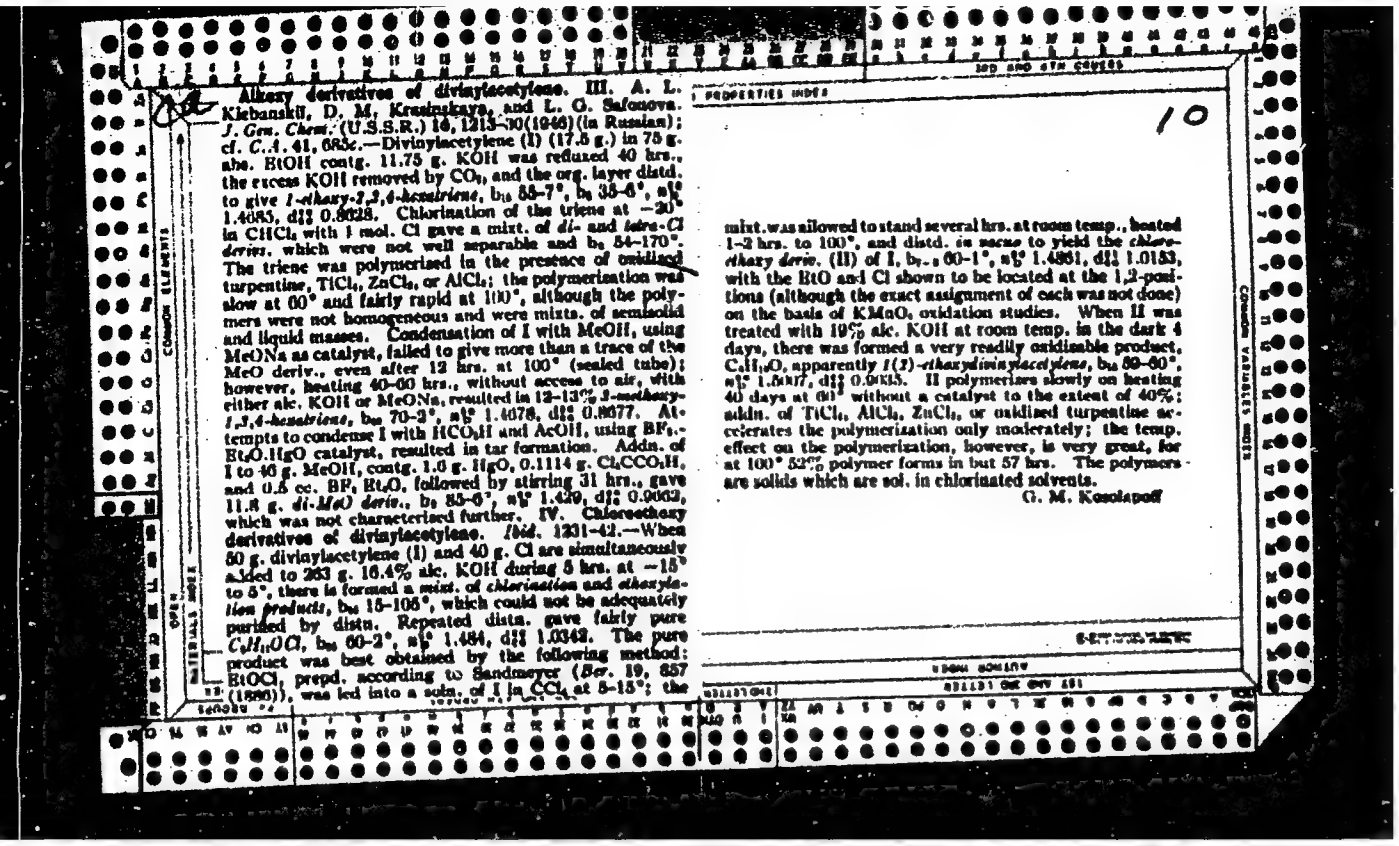
Chas. Blanc



CA

Light-stable lithopone. D. M. KRASNOKAYA and E. F. BELANKOV. Russ. 25,062, Mar. 31, 1932. $ZnSO_4$ is treated with a soln. of $Na_2Cr_2O_7$ or $K_2Cr_2O_7$. The product is then treated in the usual manner to ppt. Fe and the filtrate is treated with Zn dust or metallic Zn.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



Alkoxy derivatives of divinylacetylene. III. A. L. Klebanskii, D. M. Kreinskaya, and L. G. Safonova. *J. Gen. Chem.* (U.S.S.R.) 16, 1213–20(1946)(in Russian); cf. *C.A.* 41, 685c.—Divinylacetylene (I) (17.5 g.) in 75 g. abs. EtOH contg. 11.75 g. KOH was refluxed 40 hrs., the excess KOH removed by CO_2, and the org. layer distd. to give *1-ethoxy-3,5,6-hexatriene*, b_{18} 55–7°, b_{9} 35–6°, n_D^{20} 1.4685, d_4^{20} 0.8028. Chlorination of the triene at −20° in $CHCl_3$ with 1 mol. Cl gave a mixt. of *di-* and *tetra-Cl derivs.*, which were not well separable and b_4 54–170°. The triene was polymerized in the presence of oxidized turpentine, $TiCl_4$, $ZnCl_2$, or $AlCl_3$; the polymerization was slow at 60° and fairly rapid at 100°, although the polymers were not homogeneous and were mixts. of semisolid and liquid masses. Condensation of I with MeOH, using MeONa as catalyst, failed to give more than a trace of the MeO deriv., even after 12 hrs. at 100° (sealed tube); however, heating 40–60 hrs., without access to air, with either alc. KOH or MeONa, resulted in 12–13% *3-methoxy-1,3,4-hexatriene*, b_{20} 70–2°, n_D^{20} 1.4078, d_4^{20} 0.8077. Attempts to condense I with HCO_2H and AcOH, using BF_3.Et_2O.HgO catalyst, resulted in tar formation. Addn. of I to 46 g. MeOH, contg. 1.0 g. HgO, 0.1114 g. Cl_3CCO_2H, and 0.5 cc. BF_3.Et_2O, followed by stirring 31 hrs., gave 11.8 g. *di-MeO deriv.*, b_5 85–6°, n_D^{20} 1.479, d_4^{20} 0.9062, which was not characterized further. IV. **Chloroethoxy derivatives of divinylacetylene.** *Ibid.* 1231–42.—When 50 g. divinylacetylene (I) and 40 g. Cl are simultaneously added to 263 g. 16.4% alc. KOH during 5 hrs. at −15° to 5°, there is formed a *mixt. of chlorination and ethoxylation products*, b_{20} 15–105°, which could not be adequately purified by distn. Repeated distns. gave fairly pure $C_8H_{11}OCl$, b_{20} 60–2°, n_D^{20} 1.484, d_4^{20} 1.0342. The pure product was best obtained by the following method: EtOCl, prepd. according to Sandmeyer (*Ber.* 19, 857 (1886)), was led into a soln. of I in CCl_4 at 5–15°; the mixt. was allowed to stand several hrs. at room temp., heated 1–2 hrs. to 100°, and distd. *in vacuo* to yield the *chloroethoxy deriv.* (II) of I, b_{1-3} 60–1°, n_D^{20} 1.4861, d_4^{20} 1.0153, with the EtO and Cl shown to be located at the 1,2-positions (although the exact assignment of each was not done) on the basis of $KMnO_4$ oxidation studies. When II was treated with 19% alc. KOH at room temp. in the dark 4 days, there was formed a very readily oxidizable product, $C_{12}H_{18}O$, apparently *1(2)-ethoxydivinylacetylene*, b_{18} 89–90°, n_D^{20} 1.5017, d_4^{20} 0.9015. II polymerizes slowly on heating 40 days at 60° without a catalyst to the extent of 40%; addn. of $TiCl_4$, $AlCl_3$, $ZnCl_2$, or oxidized turpentine accelerates the polymerization only moderately; the temp. effect on the polymerization, however, is very great, for at 100° 52% polymer forms in but 57 hrs. The polymers are solids which are sol. in chlorinated solvents.

G. M. Kosolapoff

KRASINSKAYA, D. M.

"Alkoxy-Derivatives of Divinylacetylene. III." by A L. Klebansky, D B. Krasinskaya and L. V. Safonova. (p. 1229)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1946, Volume 16, No. 8

KRASINSKAYA, D. [illegible]

"Chloroethoxy-Derivatives of Divinylacetylene. IV." by A. L. Klebansky, D. [illegible] Krasinskaya, and L. G. Lafonova. (p. 1241)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1946, Volume 16, No. 8

AUTHORS: Klebanskiy, A. L., Krasinskaya, D. M. SOV/79-28-8-13/66

TITLE: Synthesis of the Alkoxy Derivatives of Divinyl Acetylene (Sintez alkoksiproizvodnykh divinilatsetilena)
VII. Concerning the Orientation of the Addition of Ethyl Alcohol to Divinylacetylene (VII. O napravlenii prisoyedineniya etilovogo spirta k divinilatsetilenu)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 8, pp.2061-2064(USSR)

ABSTRACT: In a previous report (Ref 1) it was shown that the addition of various alcohols to divinylacetylene, in the presence of a sodium alkoxy compound and at the boiling point of the mixture, takes place at varying positions. One could assume that the locus of addition was dependent upon the reaction temperature or the structure of the radical. In order to clarify the influence of the reaction temperature on the position at which ethyl alcohol adds to divinyl acetylene a decomposition reaction was carried out in the presence of a sodium alkoxy compound and at a lowered temperature of 60° (previous temperature: 85 - 95°), a temperature corresponding to the reaction temperature for methyl alcohol. It was found that the addition takes place primarily in the 1 and 4 positions,

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as is the case with methyl alcohol, and not in the 1 and 6 positions as it had at the higher temperature. The rate of addition of the ethyl alcohol is clearly less than that for methyl alcohol at the same temperature. The yield of ethoxy derivative after 300 hours was 14 %, while the methoxy yield was 12 - 13 % after 40 - 60 hours, both calculations based on the starting carbonic acid. The addition product of the ethyl alcohol is a 3-ethoxyhexatriene-1,3,4 (formula I). Its structure was proved by ozonolysis, whereby formic, acetic, and oxalic acids were obtained. Thus it was shown that the addition of ethyl alcohol to divinylacetylene is conditioned by the reaction temperature (see Formula I and Formula II). Further investigations showed that an isomerization results when the mixture is heated for a longer time, and that the primary addition loci are the 1 and 4 positions, the 1 and 6 position forms then resulting from subsequent isomerization. There are 3 references, 2 of which are Soviet.

SUBMITTED: June 27, 1957

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SOV/79-28-3-13/66

Synthesis of the Alkoxy Derivatives of Divinyl Acetylene. VII. Concerning the Orientation of the Addition of Ethyl Alcohol to Divinylacetylene

Card 3/3

DOLGOPOL'SKIY, I.M.; KLEBANSKIY, A.L.; KRASINSKAYA, D.M.

Polymerization of divinylacetylene. Zhur. prikl. khim. 31 no.9: 1403-1408 S '58. (MIRA 11:10)
(Acetylene) (Polymerization)

KRASIN, G.

Standardization in housing construction. Standartizatsiia 29 no.8:27 '65. (MIRA 18:10)